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## THE DUTY OF THE MEDICAL PROFESSION TOWARD THE COUNCIL ON PHARMACY AND CHEMISTRY*


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The work of the Council on Pharmacy and Chemistry has been the subject of so many able discussions that I shall not attempt to do more than recall to your minds some of the main features of this work and offer suggestions for giving effect to it.

Sollmann has written of "The Broader Aims of the Council," setting forth the ultimate objects for which the Council is striving, and about a year ago a committee of the Board of Trustees submitted a special report to the House of Delegates in which the conditions that had made the organization of the Council necessary were reviewed. In that report attention was called to the failure of the medical profession to support this work properly; and a resolution was offered endorsing the work of the Council and pledging the best efforts of the members of the House of Delegates in furthering it.

The widest publicity has been given to Sollmann's articles and to the report of this committee, and few who have the interests of therapeutics at heart can be ignorant of them; but the majority of teachers in medical schools are not well informed concerning the problems that confront the Council and the part they should take in the movement which has for its ultimate purpose the placing of therapeutics on a rational basis. My present remarks, therefore, will be addressed largely to those who have failed to lend active support to this movement.

Therapeutics was in a condition termed chaotic at the time that the Council was formed about eleven years ago, and though there has been a great improvement, this is incomparably less than it would have been if teachers in medical schools had taken a more serious interest in its work.

The early efforts of the Council were devoted largely to disproving the misleading claims made by the exploiters of nostrums that were advertised to physicians; but despite the exposures that were made, the exploitation continues in the most brazen fashion without any pretense that the Council's reports were inaccurate.

It would seem almost self-evident that the exposure of the fraudulent nature of a preparation would result in its disappearance from the advertising pages of reputable medical journals, but a perusal of the advertising pages of many of the leading medical journals will show that there has been little change as the result of the exposures by the Council, and useless, dangerous and fraudulent preparations are still advertised as before.

"The burnt child dreads fire," and it would seem that physicians who had learned of the deceptions that had been perpetrated on them would be more cautious about accepting the statements of interested nostrum venders; but I do not believe that many of you are aware of the frequency with which even the leaders of medical thought allow themselves to be used in the exploitation of nostrums no better than those that have been shown to be fraudulent.

A careful review of the literature of many proprietary preparations will show that this consists largely of verbatim quotations from papers read by eminent clinicians. When one comes to examine the original papers from which these quotations are taken, he finds the statements exactly as quoted, but without evidence to support them, and if he seeks further he will find that the statements are practically repetitions of older claims made in the advertising literature of the nostrums. In other words, the clinician quotes the advertising circular, without crediting it, and the nostrum maker quotes the clinician and quotes him as the authority for the words that he had put into his mouth. And this then passes for medical literature, to our shame.

Horatio Wood[1] says of one who gives no evidence in support of his statement that he goes on the common principle of the nostrum vender that any assertion made with sufficient dogmatism will be accepted by the medical profession.

This is a severe indictment of those who claim to be members of a learned profession, but if any one is disposed to doubt the correctness of the indictment he may dispel his doubts by analyzing many of the statements made in the advertisements of the nostrums appearing in the medical journals.

A similar indictment is made in different words in the report of the committee of the Board of Trustees to which I have referred, and to which I shall refer again. In this report it is stated that the physician is often made an unconscious dupe and accessory to the exploiter.

These and similar charges have been made against physicians so frequently that they no longer produce a blush; they are hardly noticed, and are forgotten almost as soon as uttered; but it must be obvious that those who make such charges are slanderers or that there are many physicians who are totally unfit to prac-

* Chairman's address, read before the Section on Pharmacology and Therapeutics at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

1. Wood, H. C.: Pharmacologic Superstitions, THE JOURNAL A. M. A., April 8, 1916, p. 1067.

tice medicine but who continue in good standing in medical societies.

Let us consider for a moment just what this means. Quoting again from this report: "The country doctor (and it might be said with equal truth in essentials of many of the leaders of medical thought of this very hour) no longer took with him in his saddle-bags a few reliable drugs with whose actions and limitations he was familiar, but ready-made mixtures about the composition of which he knew little and about the therapeutic actions of which he knew less, for all he knew was what was told him by the manufacturer, who was in most cases a layman, without knowledge of medicine, pharmacy or chemistry." That is exactly what is done (except for the saddle-bags) by thousands of physicians today.

Several years ago many teachers in medical schools received circulars describing in glowing terms the value of certain mining stocks written by one who pretended to give advice based on expert knowledge. It was shown subsequently that his only knowledge of the subject had been obtained from the owners and promoters of the mining stock, and the writer of these glowing circulars was sent to the penitentiary, where he spent about a year, probably thinking over the unwisdom of giving expert advice to investors without having first acquired expert knowledge. I trust the analogy is obvious.

I have endeavored to speak plainly in order that every one may realize the necessity of our correcting these conditions that are so little to the credit of the medical profession; and since it is obvious that the mere exposure of deception is alone insufficient to deter physicians from using the nostrums so exposed, we must seek further for the means of instituting a rational system of therapeutics, and ways whereby each of us may contribute his part toward correcting existing abuses.

It is plain that a rational system of therapeutics must rest on an adequate knowledge of the pharmacologic and therapeutic actions of the agents employed; and since it is wholly impossible to know the actions of any considerable number of drugs, it becomes equally plain that the first step consists in selecting a few drugs of real value and extending our knowledge of them.

The Council has published a list of drugs that are deemed essential in the treatment of the sick under the title of "A Handbook of Useful Drugs." This list is far from perfect, but it will serve as a starting point, and with the extension of our knowledge it will be improved by such additions and deletions as may be found necessary.

Every teacher of pharmacology and therapeutics can render a distinct service to medicine by cooperating with the Council in improving this list. An examination of any textbook of pharmacology or therapeutics will show how fragmentary our knowledge is concerning even those drugs which are in common use and which have been studied extensively. We know little of such fundamentally important questions as the absorption and elimination of quinin, morphin, strychnin and the digitalis bodies. We are in total want of agreement concerning even the doses of many of our most frequently used drugs, and we have almost no knowledge of the differences in activity of various drugs by different modes of administration, and one is astounded at times by our reckless use of potent drugs.

If our knowledge of such fundamental character is so imperfect concerning our more important drugs, imagine how profound is our ignorance of the less frequently used agents and of the secret nostrums.

There is a strong tendency in many quarters to manifest impatience with those who employ their time in investigations of such purely practical questions as these, and brilliant reputations are not built on the results of such prosaic work. But pharmacologists cannot render the service to medicine that therapeutics rightly demands of them unless they devote at least a portion of their time to the solution of these problems, and the want of a rational system of therapeutics will continue to serve as a source of reproach to pharmacologists and clinicians until more earnest efforts are made to supply the knowledge now needed so urgently.

I have framed a severe indictment against therapeutics, as many others have done before me; but while we have hitherto contended that the clinician had only to turn to well known drugs in place of the nostrums shown to be fraudulent, we have found that the appeal has fallen for the most part on deaf ears, and on looking further into the matter we see a reason—there are no well known drugs to which we can turn.

Many will protest that morphin, quinin, atropin and digitalis are well known. To this I can only answer that they have long been known, and that they have certain well recognized actions; but that they are well known, I deny, though I will say freely that our knowledge of them relative to that of the nostrums almost entitles them to be classed as well known.

Pharmacologists have not always clarified the subjects that they have investigated. They have often misled clinicians into believing that the results obtained through the experimental use of enormous doses of drugs in the laboratory were analogous to those that would be secured by the use of therapeutic doses. Thus pharmacologists found that the perfusion of concentrated solutions of digitoxin through vessels induced active constriction of those vessels, and clinicians became convinced that digitalis and digitoxin were contraindicated in those conditions in which a high rise of blood pressure might prove dangerous, and that strophanthus should be used in such cases because of its far slighter tendency to cause vasoconstriction.

Clinicians were thus led to employ strophanthus, which is absorbed so irregularly as to be a most dangerous drug for oral administration, in many cases in which digitalis would have proved a means of averting death.

It is not my purpose to create a spirit of antagonism between pharmacologists and clinicians. One might as well foment mutiny on board ship during a storm. I do desire earnestly to learn how we may best cooperate to stop abuses that threaten the welfare of medicine.

I believe that I have pointed out a way whereby pharmacologists and clinicians can cooperate with the Council most effectively, and just here I wish to utter a word of warning lest my remarks on this score be misunderstood. I would not have any one suppose that all who would cooperate with the council are expected to agree that its findings are always correct. Nothing could be further from my thoughts, for the Council can have no truer friend than he who in good faith points out its errors and assists it to come to correct decisions, for its influence for good must increase with the reliability of its decisions.

But it is not to the pharmacologists and the clinicians alone that I would appeal for cooperation, for there is no greater fallacy than that of supposing that

the desired reforms can be brought about rapidly without the cooperation of teachers in the various branches of medicine. Those who wish to cooperate will find suggestions for their guidance in a series of letters that were prepared some time ago by the Council's Committee on Medical Education; but I would lay especial stress on the fact that effective cooperation requires an understanding of the problems involved.

While the details demand careful study, the broad principles to be followed are plain. The physician must learn to coordinate his knowledge of physiology and pathology better for the diagnosis of disease; he must base his therapeutic use of drugs on a more accurate knowledge of their pharmacologic actions; he must know more of the possibilities and limitations of their therapeutic applications; he must learn the art of prescribing, and especially should he observe simplicity in the prescribing of drugs; he must learn something of the recent history of therapeutics in order that he may avoid its pitfalls and the way that lies back into therapeutic chaos; he must learn that independent research offers the only means for therapeutic progress; that accuracy of clinical observation must take the place of vague impressions; that clear and concise descriptions of the therapeutic actions of drugs must replace meaningless statements, such as "the medicine seemed to do good"; that no statement regarding the actions of a drug should be accepted without analysis of the evidence on which it is based, and that statements without supporting evidence are wholly valueless, no matter how eminent their author may be; above all, every physician must bear in mind that when he undertakes to advise his patients concerning the use of a drug without having first acquired the knowledge on which alone such advice can be given honestly, he is perilously near to the commission of a fraud.

Then, and not until then, will therapeutics be established on a rational basis, even though our knowledge is still fragmentary, for no man can be justly blamed for failing to acquire greater knowledge if he has learned the little that is available—however little that may be.

Ours is considered a learned profession; we enjoy great privileges and have correspondingly important duties to the public; we hear it asserted frequently that our profession is engaged in a great struggle to alleviate suffering and to ameliorate the condition of mankind. It is indisputably true that a vast amount of our energy is thus directed, but unfortunately, it is just as indisputably true that we have permitted ourselves to become the "dupes and accessories" of nostrum venders; we have continued to prescribe nostrums that have been proved to be fraudulent even though not a word of evidence has been offered in their defense. We have accepted fees for prescribing drugs and nostrums about which we knew no more than did those for whom we prescribed; we continue to support medical journals that assist in the exploitation of nostrums that are known to be useless; we admit profound ignorance regarding the actions of all of our drugs, and yet we spend little time in investigating them. We use drugs recklessly when we are employed to save life and are trusted as men in no other profession; we take words out of the mouth of ignorance and proclaim them with authority; we take statements without evidence to support them, and on them base the treatment of the sick; but we would not risk our savings on the strength of such flimsy assertions.

I would that I had the power to carry home to every individual member of the medical profession a sense of his duties to the public, to his profession and to himself so that he might see himself in his true light, for I believe that our failure to correct these abuses is, as stated in the report which I have frequently quoted, due to inertia and not to a deliberate neglect of a duty that will become plain to any one who will be honest with himself and analyze the situation carefully.

I am well aware that I have used forcible language; but I would remind you that I speak for myself no less than for many others. I would bring it home to every man in the medical profession that not one member of it can say that he bears no share in its guilt, unless he has done the utmost that lies in his power to correct abuses that are so apparent to all who will see.

I would gladly close my address with an appeal directed solely to the high sense of duty, the integrity and to the honor of the men in the medical profession, but unfortunately we have seen that the most stirring appeals fall on deaf ears; that those who hear consider that they are not concerned in the abuses; and that the abuses continue unchecked despite the clearest analyses and the most earnest entreaties that can be urged. The time has come to consider whether other measures should not be adopted.

In the course of my efforts, as chairman of the Council's Committee on Medical Education, to secure cooperation in promoting the work of the council, I consulted a gentleman who had wide experience and much success in correcting some of the most flagrant abuses that afflicted medical education. He manifested a willingness to aid the committee, but at the same time he expressed the firm conviction that a direct appeal to the public must be made in order to bring practicing physicians to a realization of the nature of the offenses of which they were guilty, and he urged me to lay the facts before the writer for a popular magazine just as I had presented them to him.

I believe that it is far better for us to correct our own mistakes, but I also believe that unless we do correct them without unnecessary loss of time the appeal to the public should be made, and, to quote again the special report of the committee of the Board of Trustees, "The thinking members of the profession recognized the evil, and year after year resolutions were passed by the American Medical Association, calling on the profession for an enlightened stand on the subject, but no practical results were obtained." The report then states that the Council was formed and that it has exercised enormous influence not only here but also in Europe, especially in England and Germany; but further on in the report we find the following statement "Today we have this anomalous condition: The medical profession through its authorized agency (the Council) has shown certain medicinal preparations to be fraudulent; the same medical profession, however, is supporting medical journals that are promoting these very preparations and in some instances accepting advertisements which the lay press rejects as fraudulent. The condition is not only anomalous—it is ridiculous." The report suggests the remedy, but just as resolutions were passed year after year without practical results, this ringing appeal to the medical profession has not produced any improvement that I can perceive.

An eminent historian has said that it is as wicked as it is vain to attempt to deny the teachings of history, and I would have the members of the medical profession examine the teachings of history so far as they apply to the present anomalous conditions in therapeutics. I will cite one or two facts of recent history that have an important bearing on the questions now under discussion.

Nearly every one present remembers the autocratic and oppressive insolence of which corporations, and especially those controlling the great railways of the country, were guilty but a few years ago. They then seemed to enjoy privileges that enabled them to look with scorn and derision on the individual who protested against their injustices. But what is the result? In answer I will read a paragraph taken from the New York *Times* of the day on which this article was written:

> We have been deposed. The head of a railroad today is little more than a chief clerk under orders. He finds himself hedged about with countless restrictions. If he finds that some rate is too low and tries to raise it, he has a federal or state commission to deal with, who are hard to convince that any railroad rate should ever go up. If he needs more money, and succeeds in convincing the commission that he does, he is told to get it some other way than by raising rates. When he tries to get it that other way he is told by one or the other commission that it is against the law.

In the case of the railroads, as in the present instance, appeals and warnings alike fell on deaf ears, and retribution has overtaken those who would neither hear nor see.

I will cite another fact of recent history that may come nearer home to you. We were all aware of the long standing abuse of habit-forming drugs and the terrible effects of their use. Again and again appeals were made to the medical profession to take steps to control this evil, and although it was well known that physicians were responsible for a part of the evil, no practical results were obtained.

What is the result? The public, together with a few physicians in sympathy with it, took the matter into its own hands and we have the Harrison Narcotic Law, against certain provisions of which physicians complain, and in New York we have a far more irksome state law against which the members of the medical profession, almost to a man, rail in impotent wrath. This is another instance of retribution for long continued indifference.

Is there any one so blind that he will not see the application of these lessons to the conditions which now obtain in therapeutics? What will the public do if it is thoroughly aroused to the facts set forth again and again in the discussions of the subject by leaders in the profession like Councilman, Harris, Grant, Tyson and Wood, in which they are forced to use such ugly words as "fraud," "dupes," "therapeutic superstition," and "recklessness in the use of drugs"?

414 East Twenty-Sixth Street.

**The Course of the Student.**—From the very day on which a young man begins his medical studies he should frequent the hospital. He should be constantly viewing sick people. . . . I demand that the young student should visit the hospital every day. . . . Very soon in his courses, after a few months of study, the pupil should begin to collect and jot down his own observations at the bedside. . . . I believe that I should fail in my duty if I did not insist on this point. To know the natural course of diseases is more than half of medicine.—Trousseau.

# A STUDY OF TWO HUNDRED AND TWENTY-SIX CASES OF CHOREA *

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Notwithstanding the voluminous literature on chorea at our disposal, many of its phases are yet open to discussion. The principal reason for this is the fact that we are still groping in the dark as to the etiology of the disease. This uncertainty is the cause of the many different interpretations as to the predisposing factors that give rise to the disease. We must therefore seek for more circumstantial evidence, so to speak. Any additional information that will assist in clearing up the facts connected with the disease will be of value. Having at our disposal the records of cases treated by us and our colleagues at the Sarah Morris Hospital for Children, we desire to present, in the form of a statistical study, a summary of our experience.

*Frequency.*— It is a well-known fact that chorea is one of the common diseases of childhood. See, in the course of twenty-two years of activity in a children's hospital, treated 531 cases of chorea, approximately 0.8 per cent of all cases. Rufz found 189 cases of chorea among 32,976 sick children, about 0.5 per cent. Wicke, on the other hand, observed the disease in only 0.18 per cent. of cases. Our records show a total of 226 cases of chorea treated since 1880, the year in which our general hospital opened. During these years about 80,000 patients have been treated. Of this number about 10,150 were children, making the chorea cases about 2.2 per cent of the total. We may mention here that of the 226 cases treated at the hospital, some of the clinical records are incomplete or indefinite, and for this reason not all of the information sought can be supplied in this report.

*Age.*—Friedländer claims to have seen congenital chorea in two sisters, and Mayo tells of a case in which the fetus was affected with chorea as a result of a fright of the pregnant mother. Sachs claims to have seen chorea in children under 1 year of age, while the earliest age at which Wicke saw chorea was 2 years. Soltmann saw one case in a girl aged 3½ years, which, however, proved to be a tumor cerebri. The youngest case Holt mentions is that of a child of 4. The majority of writers on the subject agree that the age of most frequent occurrence of the disease is between 5 and 15. Of 522 cases quoted by Osler, 380 occurred during this period. Of 146 patients treated by Holt, seventy-two were between 5 and 9 years, and sixty-eight between 10 and 14. Of 439 patients, McKenzie saw 43 per cent. between the ages of 10 and 15, and 34 per cent. between the ages of 5 and 10.

Our age incidence ranged from 3½ to 18 years. Two cases were seen in children 3½ years old, and one case in a girl of 18. The age of most frequent occurrence, however, coincided with that given by most authors. Our greatest number of patients were between the ages of 5 and 14, with the highest percentage between the ages of 7 and 12.

* Read before the Section on Diseases of Children at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

*Sex.*— It is agreed by all authors who have written on chorea that the disease is more prevalent among females than among males. Of 327 cases treated by Wicke, there were 117 boys and 210 girls. Sterner, out of 275 cases, had sixty-one boys and 214 girls. Osler analyzed 554 cases, and found 71 per cent. females and 29 per cent. males. Of 184 cases treated by Sachs, 136 were females and 48 males. Gowers, from a collection of 1,365 cases, found the proportion of girls to boys to be 3:1.

Our records show 151 girls and 75 boys, a ratio of 2:1, somewhat less than the proportion of most of the authors.

*Season.*— Morris Lewis, in a collection of 717 cases, found the smallest number occurring in November (3.3 per cent.), with a rapid rise in December (7.8 per cent.). The number remained about the same during January and February, rising to its height in March (14 per cent.), and falling in April (8.7 per cent.). In May the percentage increased again to 11.1 per cent., after which there was a steady decrease to the lowest point of the curve in November.

Of his original 100 cases, Gowers found 33 per cent. occurring in the first three months of the year; 25 per cent. in the second three months; 20 per cent. in the third, and 22 per cent. in the fourth. Gowers reports cases in which relapses took place at the same season for several successive years.

Our records show the time of the year at which the children entered the hospital, which may be considered as the time of onset of the disease. January showed the highest number of admissions with chorea, December the next highest, and October the lowest. Our records do not corroborate Gowers' assertion as to the seasonal recurrence of the disease.

*Rheumatism.*— It is customary in medical literature to credit Roger (1866) with the conception of the relationship between rheumatism and chorea. The fact is that as early as 1831 Thomson[1] considered the main cause of chorea as "metastatic rheumatic inflammations of the cord and its nerves." Hughes (1846) saw 104 cases of chorea in which only fifteen had no associated rheumatism or heart affection. Bright[2] considered heart affections after rheumatism as the link between rheumatism and chorea. This much, however, is true, that Roger was the first one who conceived the idea that articular rheumatism, affections of the heart, and chorea are parts of the same pathologic entity. It was he who differentiated between chorea rheumatica, chorea cardiaca and chorea rheumatica-cardiaca, depending on which one of these affections or symptoms manifested itself first. This view of Roger, Thomson and Hughes met a good deal of opposition. Rilliet argued that the coincidence of chorea with rheumatism is far below the frequency of rheumatism as a disease, and were chorea dependent on rheumatism we should see more chorea in practice than we do. Furthermore, chorea affects females more frequently than males, while the opposite is true of rheumatism. Rilliet, therefore, thought the belief as to the relationship of the two diseases was an erroneous one.

Romberg also saw no connection between the two diseases, and Wunderlich considered the rheumatic pain, often manifested in chorea, as a manifestation of hypersensitiveness and not as a rheumatic affection. Steiner (1868) saw only four cases of associated articular rheumatism in 252 cases of chorea. In recent years, however, the theory of the association of chorea and rheumatism has gained a good deal of credence. Osler has secured histories of definite articular swellings in 15.8 per cent. of his cases and rheumatic pains in 5 per cent. of them. In Starr's tabulation there is a history of rheumatism in 26 per cent. of the cases quoted. Heubner goes so far as to include chorea in the chapter of infectious diseases, and G. F. Still goes to the extreme of regarding chorea as much an evidence of rheumatism as gumma is of syphilis.

Attempts have been made to establish the relationship of the two diseases bacteriologically. Poynton and Paine, who cultivated the *Micrococcus rheumaticus* in cases of articular rheumatism also found the organisms in the brains in cases of chorea associated with rheumatism. Richards[3] reported two cases of chorea in which a *Streptococcus viridans* was found in the blood. He found the organism to be culturally identical with the description of the green-producing streptococcus of Schottmueller and probably not different from the description of the *Micrococcus rheumaticus* of Poynton and Paine. Dick and Rothstein[4] isolated a streptococcus from the throat of a patient who had been suffering from chorea for five years and injected it into a dog which developed choreiform movements twelve hours after the injection. Sachs also found a streptococcus in one case of chorea. These, however, are isolated cases, and as yet we cannot claim to have proved bacteriologically the relation between chorea and rheumatism. We must depend, therefore, on a study of case histories, although we admit that this is not the most satisfactory method of proving or disproving the relationship between the two.

Our records in this connection are interesting from a negative point of view. While it is our belief that chorea has an infectious origin, from our records of 143 cases in which special mention was made as to history of rheumatism previous to attack, only thirteen cases gave a definite history of articular rheumatism. Eight cases gave a history of pains in the legs, one of pains in the hip, and two gave doubtful histories. In 119 cases it was definitely established that there was no manifest rheumatism preceding the chorea. If in addition to these we exclude the nine cases that gave a history of pains in the extremities, and the two cases which were of a doubtful nature, there remain but thirteen cases that show a positive history of rheumatism, compared to 130 cases in which the history of rheumatism is negative.

*Tonsillitis.*— Our records show similar findings regarding the relationship between chorea and tonsillitis. We have complete records of 135 cases, out of which ninety, or 66⅔ per cent., give no history of tonsillitis, and forty-five, or 33⅓ per cent., give a history of tonsillitis. These findings seem to contradict the supposition that chorea depends only on diseased tonsils. This opinion is at variance with the one expressed by many authors who claim that the majority of cases of chorea have their inception in the tonsils.

*Infectious Diseases.*—A number of authors have attempted to show the relationship between chorea and some infectious diseases. Trousseau mentions cases of

1. Thomson: London Med. Gaz., 1831.
2. Bright: Cases of Spasmodic Disease Accompanying Affections of the Pericardium, London Med.-Chir. Tr., 1839.
3. Richards, J. H.: Chorea, THE JOURNAL A. M. A., Jan. 10, 1914, p. 110.
4. Dick, G. F., and Rothstein, T.: A Streptococcus Producing Symptoms of Chorea in a Dog, THE JOURNAL A. M. A., Oct. 11, 1913, p. 1376.

chorea developing from one to three months after scarlet fever. He thinks that children who are affected with rheumatism after scarlet fever seldom escape chorea. In about 6 per cent. of his cases of chorea Priestly found scarlet fever as the only previous disease. Sinkler, on the other hand, found a history of scarlet fever in many of his 853 cases of chorea, but only eleven that shortly preceded the onset of the disease. He sees no special connection between the two diseases. Gowers is of the same opinion as Sinkler. Sturges believes that a history of whooping cough occurs more frequently in choreic than in nonchoreic children. The same has been ascribed to measles. Our records show that nearly all of the chorea patients had measles, but there were only two in which the measles was followed directly by chorea.

Twenty-six cases gave a history of whooping cough, none of which, however, came on directly after the disease. Twenty-five cases gave a history of scarlet fever, only two of which followed the disease directly.

It is interesting to note that in the two cases that followed scarlet fever there is no history of rheumatism. Our records do not seem to justify the claim of intimate relationship between chorea and infectious diseases, although it is reasonable to suppose that an infectious disease may precipitate chorea in a child by producing a focus of infection in the central nervous system.

*Syphilis.*—Of late there has been a tendency among French authors to claim a connection between syphilis and chorea. Milian reports fifteen cases of chorea with positive syphilis in eleven cases, or 73 per cent. Apert, Rizard and Babonulit emphasize the connection between the two diseases. Some have even gone to the extent of treating every case of chorea with salvarsan or neosalvarsan (Weill, Monsiquand and Goyet). On the other hand, neither Koplik nor Comby sees any relationship between the two diseases. Our records show two cases in which there were definite manifestations of congenital syphilis. This, however, would not warrant us in drawing any conclusion as to the relationship of the two diseases. We take it as a mere coincidence, just as we would the presence of mumps under the same circumstances.

*Other Factors.*—Two of our cases followed trauma of the head. One attributed chorea to a fright. Two patients were epileptic, and probably the choreic movements were of central nervous origin. While we consider chorea to be of an infectious nature, there is no question in our minds that shock and trauma may act as the immediate exciting causes.

*Symptoms.*—Generally speaking, all of our cases manifested symptoms similar to those described by other authors on the subject. We wish, however, to call attention to one special phase of these symptoms, namely, the localization of the choreiform movements, particularly at the beginning of the disease.

Wicke, in 1844, denied the fact that hemichorea occurs more frequently than general chorea, and that the left side is more susceptible to the movements than the right. Sydenham, Thompson and Cullen, on the other hand, speak in favor of unilateral chorea. Recently the tendency has been to overlook the localization of choreic attacks and to consider them as generalized. The cases that came under our care very often showed one side more affected than the other, the left showing the greater involvement. In the series of cases which we present, in 153 (the rest of our series have no record as to generalization or localization of symptoms) we found a record of forty-six that showed greater involvement of one side or one part of the body. Thirty-nine cases showed a localization on one side, twenty on the right and nineteen on the left. We are under the impression that the number of cases with greater involvement of one side exceeds the number noted in our records. Some cases were not observed early enough for report, and others were probably not observed for localization. At any rate, we feel justified in making the statement that there is localization of symptoms in chorea.

*Complications.*—Endocarditis: Fagge found cardiac changes in seventeen out of eighteen necropsies of chorea, in five of which death was not due to the severity of the disease. Gowers, in forty cases of chorea with organic heart disease, found strong ground for attributing the cardiac affection to previous rheumatism. Our records show seventy-three cases of cardiac affections in 226 cases of chorea, the majority of which were diagnosed as mitral insufficiency, one was diagnosed as myocarditis, two as single aortic insufficiency, and one as double aortic.

Other complications were few, and these, as far as we could see, were not direct complications of chorea. In one case measles developed while the child was in the hospital; there were also bronchitis, osteomyelitis, tuberculous glands and psoriasis. Headache and vomiting were frequent. Another complication we noticed was psychic disturbance. Besides the difficulty in speech which we observed quite frequently, we saw a few patients with melancholia and mania. We recall one case in particular in which the child was very maniacal even after the abatement of the choreic symptoms, the mania changing to a melancholia which lasted for several weeks.

*Prognosis.*—The British Medical Association Investigation Committee gave the death rate of chorea at 2 per cent. It does not state, however, whether the death was due to the chorea proper or to some complication, as heart disease or rheumatism. Langmead believes that death by exhaustion is very rare.

In our series we had two deaths, making a little less than 1 per cent. of the total. In both instances death was the direct result of chorea. One was a boy of 14, who had no complications, but was very restless and had a very high temperature. No treatment was of avail. The other was a girl of 13, with such violent symptoms that she tore the skin from her body. Morphin, scopolamin and lumbar puncture had no effect in quieting her. The patient did not yield to treatment and finally succumbed from exhaustion.

*Duration of the Disease.*—According to Rilliet and Barthez, the acute chorea from which the patient recovers usually lasts from six weeks to two and one-half months. Rufz gives thirty-one days as the average duration. Dufose gives fifty-seven days, See sixty-nine days (117 cases), Wicke eighty-seven and Moynier thirty-three to thirty-seven days for girls and from seventy-four to eighty-one days for boys. Romberg reports a case of a woman seventy-six years of age who has suffered from chorea since her sixth year. Sachs found the duration of the disease in his cases to vary from four to twelve weeks.

Our records show only the length of time the patient remained in the hospital, which in most cases is a good criterion as to the duration of the disease, the majority having been brought to us at the beginning of the disease, that is, as soon as the symptoms became pronounced. Our cases showed a variation of from

one to 369 days, the former, a patient who refused to stay longer at the hospital, and the latter, a patient who developed complications. The average cases which were marked *improved* or *cured* (which, by the way, is a relative term) ranged as shown in the accompanying tabulation.

The greatest number of our patients remained at the hospital from one to five weeks, the next highest number from five to eight weeks, as indicated in the tabulation.

*Recurrence.*—According to See, chorea recurs if the disease lasts more than sixty-nine days during the first attack. See saw thirty-seven recurrences in 157 cases. Steiner had eight recurrences in fifty-two cases. Fredericks saw from ten to twelve recurrences in one boy. Among 104 patients, Sachs found that fifty had one attack, seventeen had three attacks, twenty-six had two, seven had four, three had five and one patient had eight attacks.

In our series, thirty-five patients had more than one attack of chorea. Of these one had very frequent recurrences, one had four recurrences, four had three, and twenty-nine patients had two recurrences. The recurrence seemed to have no relation to the nature of the treatment. Some patients who had received the arsenic treatment showed recurrences while others who did not have arsenic had no recurrence.

DURATION OF CASES IN WHICH THE PATIENTS WERE IMPROVED OR CURED

| Duration | No. of Cases |
|---|---|
| From 1 day to 1 week | 11 |
| From 1 to 2 weeks | 25 |
| From 2 to 3 weeks | 16 |
| From 3 to 4 weeks | 23 |
| From 4 to 5 weeks | 24 |
| From 5 to 6 weeks | 13 |
| From 6 to 7 weeks | 16 |
| From 7 to 8 weeks | 10 |
| From 8 to 9 weeks | 6 |
| From 9 to 10 weeks | 6 |
| From 10 to 11 weeks | 4 |
| From 11 to 12 weeks | 2 |

*Treatment.*—A disease that has been known in one form or another for several hundred years must necessarily have to its credit many forms of treatment and many drugs for which specificity has been claimed. Graduated massage was recommended by Laissne (1854) and Parrot (1858), baths by Rufz, Mead and Crampton, electricity by Briquet and Doucheme, venesection and purging by Sydenham and West, iron and bromid by Da Costa, and zinc oxid by Romberg. Trousseau recommended opium; Schultz, atropin, and Martin (1813), Bradsley, Gregori, Eberle and Romberg recommended arsenic. Of all these remedies arsenic seems to have had the best fate even to the most recent time. Seguin, Jacobi, Heubner, Rochford and Osler all recommend arsenic, some even in large doses, Osler having given as much as 25 minims three times a day.

Recent literature contains records of treatment by tonsillectomy and salvarsan. Our experience has taught us that there is no specific drug for chorea, and that treatment by drugs, not excepting arsenic, is not so effective as rest in bed. We have given salicylates for the probable rheumatic origin of the disease. Those patients who were treated without arsenic improved just as rapidly and as well, with as few recurrences, as those treated with arsenic preparations. In fact, we believe that the fewer drugs given, the better the results. As to treatment by arsenic, is it not a fact that many cases treated by it have been followed by arsenical neuritis? We have found this to be true in our experience as well as in that of others. Besides, is it not possible that the arsenic has a deleterious effect on the heart innervation or heart muscle? In our opinion, rest, baths and salicylates are the remedies to use in ordinary cases of chorea, except in those instances in which medication must be given for special symptoms, such as that mentioned when considering the question of prognosis. As for salvarsan, it seems unfair to treat chorea with it unless the syphilitic manifestations indicate salvarsan treatment, in which case it should be given for the primary disease and not for chorea.

## CONCLUSIONS

1. The frequency of chorea in our cases was about 2.2 per cent. of all children treated at the hospital.

2. The age incidence ranged from 3½ to 18 years. The ages of most frequent occurrence were between 5 and 14.

3. We found the ratio of females to males to be 2:1.

4. Season did not play a constant rôle in our cases. The greatest number were observed in December and January, the smallest number in October.

5. In our patients the relationship between rheumatism and chorea was not marked. Thirteen had a definite history of rheumatism; 130 had no history of rheumatism. We believe in the relationship between chorea and rheumatism, although our cases do not bear it out.

6. Tonsillitis was not a prominent factor. Sixty-six per cent. of our cases had no history of tonsillitis.

7. In our series, infectious diseases were frequently found to precede the onset of chorea, but there seemed to be no close relationship between infectious diseases and chorea.

8. Syphilitic manifestations were present in two of our cases. They seemed, however, to have no connection with the chorea.

9. Localization was frequent.

10. Endocarditis was frequent, though not a constant complication.

11. The mortality in our cases was a little less than 1 per cent.

12. The duration of the disease varied from one day to more than a year. The average duration was from two to eight weeks.

13. Recurrences occurred thirty-five times. One patient had four recurrences; four had three and twenty had two recurrences. The method of treatment had no direct bearing on recurrences.

14. For treatment we are strongly in favor of rest in bed and complete isolation, baths and salicylates. We do not believe that arsenic has any special effect on the disease; if given in too large doses it may be pernicious.

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## ABSTRACT OF DISCUSSION

DR. H. F. HELMHOLZ, Chicago: Dr. Abt referred to the relation of chorea to manifestations of a rheumatic cycle. We had about 138 cases. Of these 33 per cent. had a history of repeated tonsillitis, 21 per cent. of rheumatism and 26 per cent. of endocarditis; 8 per cent. of rheumatism and tonsillitis; 21 per cent. of rheumatism and endocarditis, and 54 per cent. of the entire group showed manifestations of one or the other of these symptoms. As regards the relationship of chorea to the rheumatic cycle, it seems to me that we have to look at it from a different point of view, if we take into account the recent work of Rosenow. We know the streptococcus has a specific tendency to localize in the heart valves

or in the joints. The same organism under slightly different circumstances may localize in the cortex of the brain. A negative finding proves practically nothing. We all know what tremendous difficulty we have had in isolating organisms from joints in acute rheumatic fever, and it is only since Rosenow has pointed out a specific technic that we have been able to find this organism in the other group of cases. The same thing applies also to chorea; we have in this case an infection with an organism having a peculiar tendency to localize in the cortex.

DR. ABRAHAM JACOBI, New York: I have seen a good deal of chorea and rheumatism. I wrote on the subject in 1875 in connection with my essay on rheumatism in children, and at that time came to the conclusion—and I own up to that conclusion yet—that chorea and rheumatism and endocarditis are in very close relationship, that the order of infection was that frequently rheumatism came first, endocarditis second and chorea third. Changes in this series will take place. Now and then a case of chorea will come first. There is only one thing I would urge—that rheumatism, which in my experience always comes first, should not be overlooked, for rheumatism in the small child is very frequently overlooked and put down as "growing pains." Small children will often have rheumatism that will only be discovered on attempted movements on the part of the nurse or mother. It seems to me that we have made very little progress as far as arsenic is concerned as a remedy. I will admit I have used a great deal of arsenic. I do not believe in its frequent effect as a detrimental agent. On the contrary, in the young and in the adult arsenic is a tissue builder, and a very useful one, and I use arsenic a great deal among children, and still more among adults as a tissue builder. For instance, in so-called chronic myocarditis, where patients are run down, where they have a functional murmur, there arsenic will do good, because it is just like phosphorus in other conditions—it is building up the tissues. I recommend arsenic as a result, not of one year, but of many years' use in a fairly well developed general practice. So arsenic is looked on by me rather as a help in therapy than as a danger. In excess it may prove dangerous, like everything else. In anemia and allied conditions I consider arsenic valuable in the development of the tissues. Dr. A. L. Goodman, the attending physician of the Jacobi Children's division of the German Hospital in New York, says chorea is curable, not after months and years, or even weeks, but in a very few days. He withdraws blood from the patient, say 40 c.c. He takes the serum, amounting to about 18 or 20 c.c., and injects it into the spinal canal of his patients, no matter how serious, even in the worst cases. Patients are sometimes cured in one day. If not cured in one day, but merely relieved, he makes another injection of the same kind within one or two days. Then almost every patient is cured and remains so.

DR. HARRY LOWENBURG, Philadelphia: I had the pleasure of seeing some of Dr. Goodman's work in New York. I made rounds in the hospital with him and observed his method of treatment and also the manner in which the blood is secured and the results of treatment. I believe with Dr. Abt that rest in bed is an important part of the treatment. It is sometimes necessary to treat the parents as well as the child. A recent case, one of violent chorea with irregular heart, came under my observation in Philadelphia. The chorea and the heart were both improved by rest in bed and Schott baths. The lad returned to his home. I found that the father had a violent temper and amused himself by whipping the child or by putting him into a dark closet or threatening to do so. The boy had a severe recurrence. The treatment in this case was to remove the vicious environment. I did so by sending for the father and threatening him with arrest. He was humbled and became repentent. The lad improved again and was sent to a summer camp. I feel that a children's ward in a general hospital is hardly the place to take care of chorea cases. I believe that they should be excluded from all sources of external irritation. This can only be accomplished by complete isolation and careful individual supervision.

DR. I. A. ABT, Chicago: The matter may be summarized as follows: In many instances chorea undoubtedly is infectious in origin. I think there are cases, however, that simply indicate nerve exhaustion or nerve fatigue in which no focal infection can be discovered. Every practitioner has seen children come to him from neuropathic families, where there may have been worry, grief, or some other condition leading to nerve instability of the children. They are often bright at school, overwork and sometimes they have difficulty in their school arising from their studies. They give no evidence of focal infection. Such children when isolated and placed at rest very readily recover. I believe chorea is not due to a single cause and that it is not due to a specific rheumatic infection. I think it is a symptom of a certain nerve condition, depending on various causes. As far as Dr. Goodman's treatment is concerned, of course we are all extremely interested. I want to say a word about arsenical treatment and rest in bed. For years I have had children brought to me with chorea. One of my colleagues might have a case in an opposite bed. I would say, "You treat with arsenic and I will treat without." The baby without arsenic, but with rest in bed, would recover just as rapidly as the other child treated with arsenic. The child's term in the hospital would be no longer than with the arsenical treatment. I think at the hospital we are now treating them without arsenic. It seems to me the treatment of these cases of chorea, especially in neuropathic children without heart lesions and no evidence of infection, is to take them away from their family, feed them, keep them absolutely quiet in bed, give them hot baths, and they generally recover in a short time.

## FEVER OF OBSCURE CAUSATION IN INFANCY AND EARLY CHILDHOOD *

EDGAR P. COPELAND, M.D.
WASHINGTON, D. C.

Fever of obscure causation in infants and young children is always of interest, because it is a condition with which we are more or less constantly confronted. The term "obscure causation" is of course used in a relative sense, for it must depend on the number of cases being observed and the diagnostic acumen of the individual observer. Apart from such considerations, however, there will be encountered, from time to time, febrile movements, the causation for which is solved with the greatest difficulty, or sought in vain by the most astute. It is my purpose, not to endeavor to discuss all of the causes of obscure fever in infancy and childhood, but to draw attention to some groups of cases that have given me some trouble during the past year.

It seems not amiss at this time to emphasize the rôle of the nervous system in the production of obscure fever, even though it is already well appreciated. As compared with the fully developed system of the adult, that of the new-born is both anatomically incomplete and physiologically deficient. Even the vital centers participate in the uncertainty of its action, as so well observed in the inordinate disturbances of pulse and respiration with which we are so familiar. With regard to function, the most striking deficiency would seem to be in the matter of inhibition. As a result of such shortcoming, reactions to stimulation, both from without and within, find their expression in uninhibited explosions of nerve force characterized by protean manifestations. So it is that the heat regulating mechanism, if we may so designate that vital part of the nervous system, responding to insult, traumatic, thermal or toxic, produces inordinate disturbances of body temperature.

* Read before the Section on Diseases of Children at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

### NERVOUS INSTABILITY

While common to all young alike, this tendency to faulty control or inhibition is most conspicuous in those who, by reason of harmful prenatal or postnatal influences, manifest instability of the nervous system in other ways, as seen for instance in so-called neurotic children. It is no uncommon experience to observe in such individuals, and indeed in those who may be considered normal, rises of temperature at times which absolutely defy recognition on any other hypothesis, unless one elects to look on them as illustrative of the limitations of our diagnostic methods.

Such rises of temperature are most often acute in character, but may continue over varying periods. They are in no sense uniform in behavior, and possess nothing in common, except it be the absence of adequate cause. They may represent either increased heat production or decreased heat elimination, one or both, but in any event nothing further than an abnormal response of the organism to the ordinary stimuli of daily existence. While such a diagnosis is acceptable only after a most careful exclusion of all other possible factors, I am convinced that, in the present state of our knowledge at least, such instances of unexplained fever will occasionally be observed in those whom from manifestations of nervous instability we designate neurotic. Such children are especially apt to be rachitic and frequently show evidences of tetany, laryngismus stridulus and general convulsive seizures.

Not only are such individuals the common subjects of such disturbance, but as a class they are especially prone to what may be termed abnormal rises of temperature from trivial cause. The family physician became familiar with such idiosyncrasies in the children under his care, and was said by the parent to "know their constitution." I have seen several such cases in the past year, and in each instance, not "knowing their constitution," reached a conclusion only after lengthy investigation and no little anxiety.

The following case is illustrative of this type:

A girl, aged 2½ years, had been under my observation since 1 year of age. She was an only child of neurotic parents, and had been artificially fed from the third month on various proprietary foods. Her progress had been marked by frequent convulsive attacks, and she had been subject to rise of temperature without apparent cause. I had been called in this particular instance because the fever had endured rather longer than usual. I discovered well marked symptoms of rickets, but a most careful examination over a period of some days failed to establish a diagnosis in this case, and the febrile movement passed without a definite determination of its nature. Two weeks later an attack of a similar nature presented itself, and after further study it was assigned to nervous instability. The subsequent course of this child's progress would seem to justify the diagnosis.

### DENTAL CARIES

Turning now from the indefinite to causes more definite, but perhaps of more frequent occurrence and just as often overlooked, I wish to draw attention to dental caries as a cause of fever. Dental caries in early childhood is a condition which should interest every medical man who has to do with the diseases of children, for it is vitally connected with their general welfare. It is only in the past few years, with the development of the study of focal infection and a better appreciation of its serious possibilities, that the profession has awakened to the significance of disease of the mouth and its adnexa. It is not within the purview of this paper to go into an elaboration of this subject, but I have been so impressed with its importance that I cannot refrain from this opportunity to give it emphasis. I have made it a rule to insist on the correction of dental caries by good dentistry, conservative if possible, but always corrective. In my experience the average dentist is more interested in the mechanics of his profession than in real pathology, and the physician does not always secure the proper cooperation in such matters imperative for the patient's welfare.

The purpose of referring to dental caries here, however, is to connect it with certain disturbances of temperature encountered in children, and this quite apart from the associated inflammations in which the diseased tooth has served as a portal of entry for infection. That dental caries can be a cause of fever cannot be denied. It is rather a cause for reflection that it is not more often observed.

As nearly as I can estimate, approximately 65 per cent. of the children presenting themselves in the outpatient department of the Children's Hospital (Washington, D. C.) show more or less dental caries. Most of these children have mouths wofully neglected and badly in need of attention. In my personal experience during the past year I was able to single out five cases in which the fever was clearly due to diseased teeth. These five cases were uncomplicated as to adenitis and other significant inflammation. There were two boys and three girls, all between the ages of 1½ and 3 years. They had been brought to the hospital because of loss of appetite, malaise and fever with excessive sweating. The fever had been present for a varying length of time, and in one instance had been intermittent. All presented marked dental caries, but were otherwise without definite findings. In one instance I was able to secure a white cell count, the first showing 14,000, the second, one week later, 13,500, and the third, two weeks after the extraction of two carious molars, 9,500. In this particular instance the dentist operated with great reluctance, because the teeth were temporary, and were, as he assured the fond mother, necessary to the proper development of the bones of the jaw. Two days after the extraction the temperature was normal and so remained.

### OBSCURE INFLAMMATION OF THE MIDDLE EAR

From the anatomic character of the infant's ear and its adnexa, and the special susceptibility of the young to infection from whatever cause, middle ear inflammation is exceedingly common, and has long been recognized to be a cause of obscure fever in early life.

Ordinarily otitis media is associated with pain, fever, restlessness and other evidences of distress, though it is not infrequently present without such subjective and objective symptoms. It is, further, most often possible to determine the presence of such inflammation from an examination of the ear itself, but I wish to draw attention to the fact that occasionally the most competent aurist is unable after repeated examination to make a diagnosis.

The following case well illustrates this point:

The child, aged 14 months, a son of one of our local physicians, was of neurotic parentage and had been artificially fed after the third month on pasteurized milk. Dentition had been delayed, and there had been excessive head sweating, though the infant had been well up to normal weight. It had suffered with follicular tonsillitis, which had been particularly prevalent in our city during the period, for two weeks.

and with it had had a marked febrile disturbance. The local manifestations had about abated, and the temperature had been normal for a period of one week, when the temperature again began to rise, and with it a return of restlessness and almost complete loss of desire for food. Though the tonsils were hypertrophic, the throat was pale and there was no evidence of local disturbance of an acute nature. The von Pirquet test was negative, as were repeated physical examinations, including a Roentgen survey of the thorax. A most competent aurist failed to render any assistance. The leukocyte count, however, was 20,500. Fever continued over a period of three weeks, irregular in character and frequently reaching normal. Examinations of the ears continued negative, while the leukocyte count, though somewhat lowered, remained well above normal. Finally at my earnest solicitation a paracentesis was done, which was followed by a scanty serous discharge, a rapid fall of temperature and a return of the white count to normal. In the month that has elapsed, this infant has been completely restored to health and has progressed normally.

This case serves to emphasize the fact that even the examination of the ear cannot always be relied on in the determination of middle ear disease, and I feel, therefore, that in obscure cases in which the leukocyte count is high and other factors have been properly excluded, paracentesis is justifiable. This is especially true when the condition has been, as in this instance, preceded by disorders that are recognized to be predisposing causes.

It might not be amiss to direct attention to the fact that, occasionally in otitis media, it is possible to observe drainage occurring into the pharynx through the eustachian tubes when the examination of the tympanic membranes is negative. This interesting point, quite new to me, has been demonstrated to me by one of our aurists on two occasions during the past few months, and is worthy of consideration. In neither of these cases could anything of a definite nature have been determined by the usual examination. As a matter of fact, I have not infrequently had the experience of having ears pronounced negative only to find later that within a few hours after there had been spontaneous rupture and drainage. This observation is in no sense a reflection on the diagnostic skill of the aurist, but rather a testimonial to the occasional obscurity of the disease.

It is well, therefore, to bear in mind that disease of the middle ear is not only a common cause of obscure fever in the infant, but what is more important, that it is occasionally of such an obscure nature in itself as to render its detection difficult, if not impossible.

### OBSCURE DISEASE OF THE TONSILS

Judging from my own experience, both in my private and hospital practice, follicular tonsillitis was unusually prevalent among infants and young children in Washington, D. C., during the past winter and spring. Most of the cases have been clear and easy of recognition, others more or less obscure and difficult of determination, especially during the first few days after the onset. The disease has shown a special tendency to lapse into a subacute stage, in which it has not been readily amenable to ordinary treatment. In a number of instances, having despaired of terminating the attack, and having been fearful of the potential mischief in the diseased tonsils, I have referred cases for operation even when low grades of temperature were present. The results have been gratifying, and the tissues removed have shown themselves to be diseased to an extent that could only have been surmised.

As in the preceding consideration, it is to the obscure disease of the tonsils that I wish to draw attention. I have made it a point to examine carefully the tissues that have been removed from my cases referred for operation, and as my experience accumulates, I am more and more firmly convinced that not only are these glands often more diseased than our examination would lead us to suppose, but that they are often the seat of infection when not suspected.

Believing, then, that the infected tonsil is often a cause of obscure fever, and having in mind the remote dangers of tonsil disease, I have made it a practice to advocate its removal at whatever age it would seem to be indicated. I am prompted to this expression because I have in a number of instances been opposed in such matters by throat men who balked at the age of their prospective patients.

### CONCLUSIONS

I am conscious of the fact that I have presented nothing new, but hope that I have at least emphasized and perhaps directed attention to some causes of obscure fever in infancy and early childhood that may have escaped the full appreciation that is their due.

In the first group, that of nervous instability, I am well aware that it is most difficult to exclude many of the obscure disorders to which the young are especially prone, but I have made it a practice to place cases in this class only after the most exhaustive search and mature consideration.

As to the second group, dental caries, I feel that much more might have been said had time permitted. We are all perfectly familiar with the secondary inflammations resulting from neglected disease of the teeth, and, thanks to the dissemination of education in this particular, cases of this sort will become proportionately less common.

The other two groups, obscure disease of the middle ear and obscure disease of the tonsil, are well known as old offenders. I wish to draw particular attention, however, to the fact that middle ear inflammation may in itself be even more obscure than is generally supposed, and that tonsils may likewise be sufficiently infected to be a cause of fever without presenting the appearances indicating the need for their removal.

The Rockingham.

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## ABSTRACT OF DISCUSSION

Dr. F. M. Pottenger, Los Angeles: Physiologic study shows that 80 per cent. of heat is eliminated through the skin, 15 per cent. through respiratory activity, and 5 per cent. through the feces, urine, warming of food, drink, and air. The elimination of heat is therefore largely under vasomotor control, through the sympathetics and is presided over by the vasomotor center in the medulla. Fever is often a part of the syndrome of toxemia. It indicates not only that there is more heat produced, but that there is an interference with elimination. Toxemia is accompanied by general sympathetic irritation, and this includes constriction of the vessels of the skin. Toxemia may be produced by the parenteral introduction of any protein into the body. When the protein finds its way into the tissues it is broken up and its toxic molecules are set free. Ordinarily, the gastro-intestinal tract takes care and destroys protein, consequently, it is assimilated without harm; but, if a fasting animal is given protein in sufficient amounts it may be absorbed and produce general toxemia, including fever. Stimulation of the vasomotor system with or without accompanying increased heat production, will produce fever. All the depressive emotional states, which we meet with particularly in adults, will raise the temperature by stimulating the vasomotors and interfering with heat elimi-

nation. Thus, we have an explanation for the rise in temperature due to nervous states.

DR. ABRAHAM JACOBI, New York: I have thought a good deal about what has been written on the subject of tonsils and I wish to say that in few cases is the tonsil at fault. Even large tonsils in a small child are not so dangerous as we are liable to be told. It is not the tonsil that is at fault, but the rest of the pharynx. All those small lymphoid bodies, so-called Waldeyer's nodes, and certain of the small bodies that surround the entrance between the nares and the throat are, as a rule, more frequently the cause of toxic symptoms and fever generally than the tonsils themselves. Meanwhile I have been teaching and practicing for fifty years and more that the nose must be kept clean. The common atomizer will not do it. You cannot clean the nose with an atomizer; you must irrigate the nose. It may be done by pouring in some warm water and salt; only caution against snuffing; that is dangerous. Bad results from nasal irrigation are the result, not of the irrigation but of snuffing, forcing the liquid into the ears. Patients should be warned about this. I have seen considerable ear disease from this cause.

DR. ST. GEORGE T. GRINNAN, Richmond, Va.: I want to ask Dr. Copeland if he has had any cases due to overexercise. I have seen cases where we could find no otitis, no tonsillitis, but the child had a temperature elevation for several months. It had gone through several hands, and very good hands, too. The only thing I could assign this to was overexercise. The child was extremely active. With instruction as to rest the child was entirely well in two weeks. In cases of what we call "obscure" rise of temperature, I really do not assume that either pyelitis or the ear can be called obscure any longer.

DR. J. L. MORSE, Boston: I want first to call attention to what seems a lack in our knowledge—that is as to the normal variation of temperature in the child. So far as I know, we have no series of experiments to show us how far the normal temperature may go in the child. Another thing in connection with obscure fever, we want to be sure the teeth are all right. Unfortunately, we have in the United States a large number of dentists who are one or two generations behind the times, who say that the first teeth should be left to take care of themselves. I feel it is the duty of this society to show these men up and, if it is possible, drive them out of business. The child may have infection from the teeth, even when they are filled. We cannot be sure they are normal without roentgenograms. Now and again will be found an abscess at the root of a tooth which will be the cause of all the trouble. Dr. Jacobi has touched on something I wished to say, that is, that children may have disease of the ethmoid cells and this may be the cause of the symptoms. Dr. Copeland did not say anything of infections of the urinary tract as a cause of fever. This is often the cause of persistent fever.

DR. C. G. KERLEY, New York: According to my observation a temperature under 100 F. may be considered normal. When the temperature ranges above 100 F. every day or for several days or weeks, I feel that the child needs close observation. In addition to examining the patient I put him to bed for three days. During this time the child is examined for the presence of occult pus, malaria, typhoid fever, pyelitis, etc. In not a few cases our clinical examinations are entirely negative and the rise in temperature which has been a daily occurrence has ceased entirely. This puts our cases among that class of children who readily develop a slight rise in temperature as a result of excessive play, overwork or excitement. The temperature during the time of the enforced quiet is taken three or four times a day.

DR. E. P. COPELAND, Washington, D. C.: I would first lay special emphasis on the fact that I did not mean to discuss all of the causes of obscure fever. It would be an interminable task. In certain types of children undue excitement, overexercise, may produce fever. Otitis media is one of the most difficult of causes to determine. I enjoyed Dr. Morse's remarks in respect to dentists. I have a great deal of trouble with them. Infections of the alimentary tract I will not allude to. I aimed to confine my remarks to cases that have given me trouble in the last year or so. The question of normal temperature is important. A reasonable variation has been allowed for in my cases.

## THE RECENT EPIDEMIC OF GRIP

JOSEPH A. CAPPS, M.D.
AND
A. M. MOODY, M.D.
CHICAGO

Last winter an epidemic of grip swept over the United States. Accurate information concerning its prevalence is difficult to obtain, because in most communities the disease is not reportable. But judging from the public health reports and from personal correspondence with experienced physicians in many cities, it would seem that few of the large cities escaped. Meager reports from small towns indicate that they were no more fortunate in this respect than the cities.

Statistics which give an idea of the percentage of morbidity are meager. We have secured the written records of patients ill with grip from four hospitals in Chicago. Of a total of 677 persons investigated, 144, or 21 per cent., were confined to bed for one or more days. This does not include many who had colds of less severity.

The epidemic began early in December, and by the latter part of January had nearly spent its force.

Was the disease essentially different from the ordinary winter colds?

Most cases began rather abruptly with coryza, pharyngitis, laryngitis or bronchitis. The chief complications were inflammation of the accessory sinuses of the head, and bronchopneumonia, the latter being responsible for most of the fatalities. None of these symptoms taken alone would justify the distinctive name of grip. But the widespread and almost simultaneous onset of this fairly uniform symptom group and the rapid cessation of the epidemic after a few weeks reminded physicians generally of the great grip pandemic of 1889-1890. This resemblance was further strengthened by the unusual prostration lasting days or weeks after even mild attacks. The older practitioners can recall no similar epidemic during the twenty-five years intervening between 1890 and this year. The numerous epidemics of septic sore throat have all been entirely different in their symptomatology, and all were restricted to certain localities. The term "grip," therefore, seems justified from a clinical standpoint.

*Leukocytosis.*—We studied the leukocyte reaction in fifty-three cases.

In thirty cases there was a count of 10,000 or less. A number showed leukopenia. In sixteen cases there was a leukocytosis of from 10,000 to 15,000. In seven cases there was a leukocytosis of 15,000 or more. It is seen from these figures that in the majority of patients leukocytosis was absent, although a temperature of from 1 to 3 degrees above normal was the rule at the time of examination.

*Pneumonia.*—The public health reports offer evidence of an unusual prevalence of pneumonia in the larger cities. Nicolas[1] calls attention to the fact that the incidence of grip was greatest in those cities in which the mortality from pneumonia was most strikingly increased. According to Mathers, a large proportion of the pneumonia cases in Chicago were of the bronchial type, such as was known to have occurred so often as a complication in the great pandemic.

1. Nicolas: Bull. Dept. Health, New York, February, 1916.

### BACTERIOLOGY

If physicians are generally agreed on the existence of a grip epidemic, it is equally true that bacteriologists have failed to agree on the causative organism.

An analysis of throat cultures taken from fifty cases clinically diagnosed as grip and sent to the New York City Health Department was reported by Williams[2] as follows: streptococcus, twenty-six cases; pneumococcus, nineteen; *Micrococcus catarrhalis*, eighteen; influenza bacillus, nine, with other less important organisms.

Moody[3] examined a series of thirty-one cases of supposed grip at St. Luke's Hospital, Chicago. Cultures from the throat were grown on blood agar. All the cases showed *Streptococcus viridans* and pneumococcus, and all showed hemolytic streptococcus in variable numbers. The influenza bacillus was found only twice.

Mathers,[4] in a similar group of twenty-four cases obtained cultures of hemolytic streptococcus in seventeen and *Streptococcus viridans* and pneumococci in all. No instance of influenza bacillus was recorded.

Reports received by correspondence from Philadelphia, Baltimore, Boston, Cincinnati and San Francisco state that the influenza bacillus was rarely found in throat or sputum cultures.

We may then infer, first, that the infection showed many organisms, the streptococcus and pneumococcus predominating; and secondly, that the influenza bacillus was not often identified. It has been suggested that the examination may have been made too late in the course of the disease to discover the influenza bacillus, which could be crowded out by the other bacteria. In a number of typical cases, however, in which cultures were made early in the disease by Moody, the results were the same as in older cases. From a cultural standpoint the streptococcus deserves more serious consideration as the causative organism than the influenza bacillus. The possibility of some ultramicroscopic germ being the cause of the disease is suggested by the investigations of Kruse[5] and more recently by Foster,[6] who was able by inoculation of filtrated nasal secretions to reproduce the symptoms of common cold.

Was the influenza bacillus responsible for earlier grip epidemics?

It is interesting that the two organisms most constantly described in the pandemic of grip of 1889-1890 were the streptococcus and pneumococcus. Not until 1892 during a recurrent epidemic did Pfeiffer[7] publish his discovery of the influenza bacillus, and it is still unproved that this organism was a factor in the earlier and more extensive pandemic.

When we call to mind the marked tendency of the influenza bacillus to appear as a secondary infection in measles, whooping cough and other respiratory diseases (Davis), the rôle of this organism in grip may well be questioned.

*Transmission of Grip.*—The theory commonly accepted is that the disease is spread directly from one individual to another. Although Leichtenstern advocates this hypothesis, he calls attention to the fact that in many large institutions, prisons and hospitals, the inmates were almost immune, while the disease was prevalent among attendants, employees and visitors. A similar relative immunity of patients has been commented on in two large hospitals in Chicago.

At present no evidence has been offered to implicate milk, water or food as mediums of infection, and the appearance of the disease over the whole country at nearly the same time renders such means of transmission very improbable.

Nicolas notes an outbreak of grip among horses in New York, characterized by a high mortality from pneumonia. A similar epidemic among horses at the Chicago Stock Yards was exhaustively studied last winter by Mathers. This investigation affords most interesting and valuable results. The nasal secretion at the very beginning of the disease yielded pure cultures of streptococcus. Death from bronchopneumonia was common. Cultures from the lung likewise showed almost pure growths of hemolytic streptococcus. Further investigation of the relationship of the strains of streptococcus obtained from equine and human influenza opens up the most promising opportunities of solving the problem.

### MEANS OF PREVENTION

As we look back on this epidemic, we may well ask what we have done to prevent its inception and its dissemination. Have we profited from the knowledge of the last pandemic of grip, and have we developed any measures of defense against the ancient foe? Not in any adequate measure. Nor is it possible to make headway along preventive lines until we have a better understanding of the etiologic factors, the bacteriology not only of the throat, nasal and bronchial secretions, but also of the blood; the results of animal and human experimentation with cultures and filtrated secretions; the comprehensive study of clinical observations; the systematic collection of data on its prevalence in institutions, in towns and cities, and the further investigation of influenza of horses and other animals.

*The Need of More Field Work.*—We have plenty of research institutions, plenty of state and municipal laboratories, plenty of men capable of doing first class investigation. The trouble lies in bringing together the problem and the investigators. This year's experience illustrates the fact that epidemics cannot be properly studied in hospitals alone or from the material that is sent in to our health laboratories. Since the mountain will not come to Mahomet, Mahomet must go to the mountain. The laboratory workers must go out into the community and there obtain their material for study.

Furthermore, there should be a better organization of team work, so that a group of men can attack the problem simultaneously from several directions and correlate their efforts. To make such a campaign effective, it is of the utmost importance to attack the epidemic at the earliest possible moment, and for this purpose a plan of preparedness is necessary. We are aware of the splendid field work that has been done in recent years by the U. S. Public Health Service, a few research institutes and by certain progressive municipal health departments. Only by great extension of this type of field investigation can we hope finally to determine the cause and discover the means of prevention of the grip epidemics.

St. Luke's Hospital.

2. Williams: Bull. Dept. of Health, New York, February, 1916.
3. Moody, A. M., and Capps, J. A.: Notes on Grip Epidemic in Chicago, THE JOURNAL A. M. A., May 27, 1916, p. 1696.
4. Mathers, George: The Etiology of the Current Epidemic of Respiratory Infections in Chicago, THE JOURNAL A. M. A., Jan. 1, 1916, p. 30.
5. Kruse: München. med. Wchnschr., 1914, lxi, 1547.
6. Foster, G. B., Jr.: The Etiology of Common Colds, THE JOURNAL A. M. A., April 15, 1916, p. 1180.
7. Pfeiffer: Ztschr. f. Hyg., 1892, xiii.

# ACIDOSIS OF GASTRO-INTESTINAL ORIGIN

## A PRELIMINARY STUDY BASED ON THIRTY-FOUR CASES *

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During the summer of 1913, our attention was particularly called to a class of cases which we have since rather loosely classified as intestinal intoxication or acidosis. Previous to this time we had occasionally noted acetone and diacetic acid in the urine of children sick with diarrhea, but had not realized their frequency or the gravity of the situation. When we began to look for these cases we found that they were fairly frequent, especially during the summer months, and that many cases which clinically belonged to this group did not reveal an abnormal amount of acetone or diacetic acid in the urine.

Perhaps the most prominent clinical feature presented by these cases was the severity of the illness, which often was seemingly out of all proportion to the amount of fever and diarrhea. The skin quickly lost its tone, there was pallor and an ashen gray color of the skin without cyanosis, the eyes became sunken, and the child was at first restless, then stuporous and finally lay in a coma. Often a specimen of urine was obtained with a great deal of difficulty even with a catheter, there apparently being a lack of urinary secretion. The progress of the illness was uneventful, ending as a rule in death within a few hours. The tongue was apt to be coated, but red at the tip and along the edges. With some exceptions the fever was not high, the range averaging from 100 to 101 F., with an occasional excursion to 102 or 103, and a rather frequent antemortem rise to 104 or more. If the patient came to the hospital early in the illness, vomiting was often marked; but later as the child became more and more stuporous, it usually became less and in the terminal stages almost ceased. The number of stools in the twenty-four hours was subject to great variation. Perhaps the most typical finding was a few foul smelling stools, or a history of many stools both during and preceding the onset of acidosis. It was not long before we noted that the most constant and perhaps the most nearly pathognomonic symptom of acidosis was alteration in the respiration. The costal and abdominal type of respiration took the place of the usual abdominal type. The amplitude of the respiration was greatly increased and was accomplished with a distinct effort. A modified Cheyne-Stokes type of respiration was occasionally present, but in general the excursion of the thorax and abdomen was nearly the same in each succeeding respiration. Eventually the respiration became feebler with only an occasional deep gasp, and finally ceased altogether, as if the respiratory center was exhausted by the exertion it had undergone. There was never any evidence of obstruction, and there was no cyanosis.

So far as we can discover, Czerny[1] was the first to call attention to the resemblance of the respiration of infants dying of this type of gastro-enteritis and that of rabbits poisoned with mineral acids.

In seeking an explanation for this phenomenon, Czerny and Keller found indications of an abnormal amount of acids in the body. Their chief proof of this condition was found in the abnormally high ammonia nitrogen, which, instead of being the normal 10 per cent., increased from 40 to 50 per cent. of the total nitrogen.[2] Langstein and Meyer[3] considered that this increase in ammonia coefficient was not due to abnormal unburned acids, but to several other factors, chief of which were (1) the loss of alkalies through the feces, whereby there was an insufficient amount of basic alkalies in the urine to neutralize the acids, so that ammonia as a neutralizing agent was increased; and (2) in the presence of intoxication in the course of inanition there was a rapid increase in the production of organic acids (acetic and oxybutyric), as a result of the disturbance of the nourishment of the infant. They were undecided as to whether in those cases of intoxication accompanied by glycosuria there was a disturbance of carbohydrate metabolism which was analogous to that occurring in diabetes which leads to an acidosis. On the whole, they refuse to commit themselves as to the seriousness of the condition of acidosis, and seem rather inclined to regard it as an expression of a condition and not of itself as a cause and effect.

Steinitz,[4] in an examination of the stools of infants on a high fat diet, especially if there was a diarrhea with loss of weight, found an excessive loss of sodium and to a less extent of phosphates, so that a negative alkali balance was established; for example, more alkali was lost in the feces than was received in the food. Holt, Courtney and Fales[5] confirmed this finding, but also found that there was an increased excretion of chlorids, which tended to establish a balance between alkali and acid loss. Clinically it seems doubtful if an acidosis can be explained on these grounds, for, after all, an acidosis is not a common accompaniment of diarrhea, and in fact seems most apt to occur when the diarrhea has been at most of moderate severity.

The formation of organic acids as a consequence of disturbance of nutrition is, of course, a matter for consideration. Where the disturbance of nutrition is at its worst, the presence of abnormal acids to a pathologic degree is not common. It is, however, in this type of case, as malnutrition, that acidosis most frequently occurs. It seems probable that a more or less lengthy period of malnutrition predisposes to such an attack. It has been suggested that the lower fatty acids, such as formic and butyric acid, which have long been recognized in the pathogenesis of dyspepsia, have a part in acidosis. The difference in the amount of these acids in acidosis is greater than in dyspepsia, perhaps on account of the introduction of special acid-forming bacteria, or as the result of the increased activity of the normal flora. The difficulty with this explanation is found in the fact that the amount of acid present is insufficient to account for the poisoning which takes place in these cases. In diabetes and cyclic vomiting there is often an enormous amount of acetone, diacetic acid and beta-oxybutyric acid without symptoms of acidosis.

* Read before the Section on Diseases of Children at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

1. Czerny: Jahrb. f. Kinderh., 1897, xlv, 271.
2. Czerny and Keller: Jahrb. f. Kinderh., 1897, xlv, 274.
3. Langstein and Meyer: Säuglingsernährung und Stoffwechsel, p. 291.
4. Steinitz: Jahrb. f. Kinderh., 1903, lvii, 689.
5. Holt, L. E.; Courtney, A. M., and Fales, H. L.: The Chemical Composition of Diarrheal as Compared with Normal Stools in Infants, Am. Jour. Dis. Child., March, 1915, p. 213.

It seems more probable that the explanation of acidosis is found in a damage to the epithelium of the intestinal tract either by acids or bacterial products. It has long been recognized that the epithelium of the intestinal wall holds back many different substances, and that when this epithelium is damaged it becomes permeable for toxic materials. Lactose and the salts of milk, for instance, under these conditions may easily pass into the blood in so great a concentration as to act as poisons to the body cells. The increased concentration of salts causes a withdrawal of water from the cells, with the consequent water hunger which is so prominent a symptom of acidosis. The loss of alkali into the intestines may be due in part to a demand for neutralization of acids in the intestinal tract, but much more to the abnormal conditions of intestinal secretions. The nitrogen loss may be due to the breaking down of the body cells, or it may be considered as a symptom of a toxic splitting of albumin. As a result of the alkali withdrawal, the water hunger and loss of weight come to have a meaning, and furthermore it is easily understood that this extensive withdrawal of water from the body tissues may lead to a permanent damage of the ability to fix water by the organism. Here we find our explanation for the malnutrition and atrophy which so often follow an attack of acidosis.

Recently Howland and Marriott[6] have sought an explanation for acidosis in the retention of acids which are the product of metabolism. They point to the low urinary output in support of their contention, and suggest that there may be a loss of the acid excretory function of the kidney. It has long been recognized that in acidosis there is an enormous increase in the actual water content of the feces, so that the amount excreted respectively in the feces and through the kidney under normal conditions is nearly exactly the reverse of that in cases of acidosis. This is almost certainly the explanation of the rather small amount of urine passed, for water that leaves the body by way of the bowel will naturally be subtracted from that which is excreted through the kidney. Furthermore, a damage to the kidney sufficient to interfere with its acid excretory function should almost certainly manifest itself in other ways. Occasionally, but not regularly, there are albuminuria and casts. Examinations in a very limited number of cases have shown a blood urea, uric acid and creatinin which are within the normal limits for these substances. Finally, there is the very natural question to be answered as to how this damage to the kidney has taken place. If there is a retention of acid phosphates in the body in these cases, it is not enough to prove merely that it is present in excess, for that shows only a derangement of the normal mechanism by which the body normally takes care of the acids formed as the result of processes of metabolism. It does not in any manner suggest the cause of the derangement; and that, after all, is the important thing if we are to exercise any powers of prevention.

As Sellards[7] has pointed out, the food supply yields a limited amount of bases, but the acid-forming substances usually preponderate, the proteins yielding considerable acid on account of their content of sulphur and phosphorus. Furthermore, it must not be forgotten that the body is constantly elaborating acids as the result of the oxidation processes in intermediary metabolism. Certain organic acids are formed in the body in small amounts, to be changed as a rule into carbon dioxid and water, although small amounts of uric acid and lactic acid leave the body unchanged. Veeder and Johnston,[8] in a study of twenty-one normal children, always found ketones and betahydroxybutyric acid in children whose caloric requirements were fully covered by the diet. To guard against the harmful effects of these and other acids, the body has a most efficient mechanism. The maintenance of the normality of tissue reaction is largely dependent on the blood stream. It carries bases to the tissues to replace those used in neutralizing acid, and it is the medium by which acid products of cellular activity are removed from the cell. Hence it is seen that within certain narrow limits an acidity of the blood and tissues may be a normal condition; and it may be quite impossible to say at just what point it becomes pathologic. There comes a time when it is unmistakable, and it may increase until it of itself is a menace to life.

From the standpoint of both diagnosis and treatment it becomes important to have a method or methods of determining the presence or absence of an acidosis at the earliest possible moment. Sellards[9] removed the proteins of the serum with absolute alcohol and evaporated the filtrate with a few drops of phenolphthalein. Under normal conditions a deep purple results, but in acidosis the color is greatly modified or may be entirely absent. Carbon dioxid determinations will give a very accurate measure of the presence or absence of acids. An increased acidity of the blood stimulates the respiratory center to an increased activity in order that there may be a reduction in carbon dioxid, for the hydrogen ion concentration of the blood must be kept at a normal level. In other words, a rise in volatile acids is compensated for by a decreased carbon dioxid tension in the blood. The carbon dioxid tension of the air in the alveoli of the lungs will be the same as that in the blood. Howland and Marriott[6] have very fully described this method as a means of diagnosing acidosis in children. More recently Van Slyke has elaborated a method of determining the carbon dioxid tension of the blood. It is the method which we have recently been using. Of our thirty-four cases the carbon dioxid blood tension was determined twelve times by the Van Slyke method. Up to the present time our results seem fairly to parallel those obtained by Howland in his determination of alveolar air carbon dioxid tension. The Van Slyke method seems to us to be more accurate, and hence more scientific, but we doubt whether clinically it has any advantages over the method described by Howland. There is, besides, the ever present difficulty of obtaining a sufficiently large amount of blood from infants and small children, though by using the jugular vein or the median sinus we have not found this to be an insurmountable difficulty.

That acidosis is a condition seems to us to be now a well established fact. We have proved methods which enable us to make an earlier diagnosis than was formerly possible, and we are finding that it is of a much more frequent occurrence than we had previously supposed. The mechanism by which an acidosis is produced is not entirely clear, but we have seen that it is a very complicated process and probably is

6. Howland, John, and Marriott, W. M.: Acidosis Occurring with Diarrhea, Am. Jour. Dis. Child., May, 1916, p. 309.
7. Sellards: Bull. Johns Hopkins Hosp., 1912.
8. Veeder, B. S., and Johnston, M. R.: On the Presence of Ketones and Betahydroxybutyric Acid in the Urine of Normal Children, Am. Jour. Dis. Child., April, 1916, p. 291.
9. Sellards: Bull. Johns Hopkins Hosp., 1914, xxv, 147.

the result of many varying factors. It has seemed to us that a study of a group of cases might throw some light not only on the cause but also on the best method of treatment.

There have been in the babies' wards of the New York Post-Graduate Hospital during the past two years no less than thirty-four cases of acidosis. It is probable that we would have a larger number if there had been a carbon dioxid determination of the blood or of the alveolar air in all suspicious cases. As it was, the diagnosis depended on the clinical symptoms or on the presence of acetone and diacetic acid in the urine, and to a less extent on the breath. In these thirty-four cases, six patients died within a few hours of admission to the wards, almost before a diagnosis could be made, and long before effective treatment could be instituted. In all, sixteen patients with acidosis died, or 45 per cent. of these thirty-four cases. If the six noted above are subtracted, the mortality rate for the remainder is 35.6 per cent. Acetone and diacetic acid were found by test twenty-six times. Two patients who did not show acetone or diacetic acid in the urine in abnormal amounts had a carbon dioxid blood tension below 40 by the Van Slyke method. Of the twelve cases in which the carbon dioxid blood tension was determined, the lowest result obtained was 22 volumes and the average was 28. A rapid increase in the blood carbon dioxid tension followed the use of sodium bicarbonate, the rise often being to the normal figure of 60, or even slightly higher, to 65. With the reappearance of symptoms there was a rapid fall of carbon dioxid tension to 40 or less.

An outstanding fact in the study of our cases is the high mortality rate. These infants not only die during the attack, but also receive injuries which are often permanent in their effects. A very superficial examination of the series serves to emphasize the frequency with which recurrence of symptoms takes place, and will in an unmistakable manner connect the attack of acidosis with the milk.

We have seen only one case of acidosis in a child at the breast, and a careful questioning of the mother brought out the fact that there had been a single milk feeding just previous to the attack. In this series all of the children at the time of onset of symptoms were on some form of whole milk modification or on a general diet that included milk. The feedings without exception were low in fats, generally did not contain an abnormal amount of sugar, and were high, sometimes excessively high, in proteins. A hot day and night were almost certainly followed by one or more cases of acidosis; and not infrequently the onset followed an early morning bottle, such as a feeding of, comparatively speaking, old milk. It is also to be noted that we have not encountered a case of acidosis in a child who for any reason was on a carbohydrate diet, even though the wards contained a number of such special diets during a period in which acidosis was fairly prevalent.

The frequency with which milk that exhibits the biologic activities of an exceptionally large number of bacteria is the cause of acidosis cannot possibly be determined by human experiment and probably not by animal experiments, for the reason that acidosis rarely occurs in children who are well nourished or who have previously had no gastro-intestinal disturbance. It is certainly not the bacteria themselves that cause the damage, but is rather the products of their life activity. Such products are the result of the breaking down of sugars and fats into acids or the poison split products of the decomposition of proteins. Such a decomposition of the milk may take place before it reaches the child, or quite conceivably after it has entered the gastro-intestinal tract. Acidosis results when these products are present in large amounts, or when the organism is especially susceptible.

In support of our idea that acidosis may result from the split products of proteins, Vaughan in a recent communication has shown that casein yields a large percentage of the protein poison, and that this poison is in and of itself strongly acid. In animals, at least, it is entirely capable of causing acute or chronic poisoning when administered by the mouth, in the latter instance resulting in extensive fatty degeneration of the tissues. There is a tendency for the protein poison of the casein to combine with certain unbroken proteins, so that its physiologic action is diminished and its acidity wholly or in part neutralized. It is interesting to note that these poisons which are consequent on the splitting of casein are capable of giving a skin reaction in all persons to whom they are administered. We find in the research of Vaughan an interesting support of our theory arrived at from clinical observations that acidosis of gastro-intestinal origin is probably always closely connected with the proteins and especially with the casein of milk. We have long believed and, as our observations have become more extensive, this belief has changed to a practical certainty that high protein feeding was not without its dangers and that under certain conditions might become an actual menace to life itself.

If the proteins or the products of the breaking down of proteins form the etiologic factor in acidosis, recurrences of this condition might naturally be looked for.

Recurrences are not only observed so near the first attack as to suggest the probability of a relapse, but are also seen over a period of weeks and months in a form which often suggests recurrent vomiting. In private practice we have had three patients who have suffered from cyclic vomiting for more than three years whose initial attack was diagnosed as intestinal intoxication and who we now know suffered from acidosis. These children had previously been well and able to care for any kind of food. At times the intolerance for milk after such an attack is so great as to suggest an idiosyncrasy or an actual anaphylaxis for milk. It would seem that this intolerance for milk is due to the protein rather than to the sugar or fats of the milk. There was certainly no apparent advantage in giving sugar or fat free milk. Whey was tried on only one occasion, for the result was such as not to be a temptation for further investigation. We should hesitate to assert that sugar was a cause of acidosis in view of the fact that of late a regular part of our treatment has been the use of glucose and thick gruels of barley, farina and oatmeal.

The suggestion that the etiologic factor of acidosis is to be found in the decomposition of proteins is supported in an interesting manner by the frequent finding of large amounts of indican in the urine. Indican was not invariably present, but when found was often in very large amounts. We also discovered that commonly it was a rather transient finding, being found on one day and absent or nearly so on the next.

Having noted that these children improved rapidly if they lived for a sufficient length of time for a cathartic to act, we were tempted to see what starvation would do. It was, however, with a considerable degree

of hesitation that we instituted this measure, for we were familiar with the fact that mere starvation could be the cause of a very rapid increase of abnormal acids. Perhaps, somewhat contrary to our expectations, we have often noted a remarkably prompt improvement to follow on a period when nothing but water and a solution of sodium bicarbonate was given. We have seen the stupor disappear and respirations fall almost to normal over night with this simple treatment. We do not consider that this improvement was entirely due to the sodium bicarbonate, for under other conditions of feeding recovery, if it took place at all, was much slower.

A very important part of our treatment has been a thorough cleaning out of the bowels and especially of the small intestines. High colon irrigations and stomach washing did not accomplish much improvement if our efforts ceased at this point. Nearly always such a catharsis resulted in a very nasty, foul smelling stool.

The use of sodium bicarbonate is to be recommended as a valuable temporary measure. It has much the same relation to acidosis that the cold pack has to temperature. It serves to keep the patient alive until other measures which require time become effective. It should be pushed until the reaction of the urine is alkaline or the blood shows a normal reaction. We have made it a practice to give the sodium bicarbonate in every possible way — by stomach, by the colon, subcutaneously and intravenously — as the urgency of the symptoms seemed to dictate.

As we have tentatively connected attacks of acidosis with the milk — and perhaps most frequently with milk which contains an unduly high bacterial count — a very essential part of our treatment has been the elimination of milk from the diet for a considerable period of time. Our most successful cases have been those in which we have made a very slow return to the proteins. To an extent we have made vegetable proteins take the place of animal proteins; accordingly these children have been given thick gruels which were cooked for many hours. With the addition of sugar as the symptoms seem to warrant, the caloric requirements for a time, at least, can be met.

The mortality rate among children suffering from an attack of acidosis is so great as to make it a condition which should demand not only our interest but also our earnest investigation into its cause and treatment. We have suggested the close relation of acidosis to the milk supply and especially to the decomposition products of the proteins of milk. We have outlined a method of treatment which is more satisfactory than any that we have previously employed, and which is based on the assumption of the close relationship of milk and this type of acidosis.

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**Ocular Reflex of Auditory Origin.**—The French authorities have designated as the standard of hearing for recruits that they can hear a whisper at 0.5 meter and the speaking voice at 4 meters. Simulation of deafness to escape military service is occasionally encountered, and it can be unmasked by the behavior of the eyes when a sudden, unexpected sound strikes the ear from nearby. With a sudden start from the loud sound close to the ear the subject winks, and the pupil may contract. This brief defensive closure of the eyelids of course does not occur if the subject fails to hear the sound. Molinié says in his description of the simple technic for the tests (*Revue de laryngologie*, 1916, p. 385) that it automatically sifts out the really deaf who might be accused of malingering otherwise.

# MYASTHENIA GRAVIS, WITH THYMOMA *

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**The patient whose case history is here given presented himself at the City Hospital in Minneapolis in November, 1915. The first and cursory examination suggested the usual type of bulbar paralysis, but after the patient had been admitted to the permanent ward and studied more carefully, the diagnosis was changed to that of myasthenia gravis.**

The family history was as follows: The mother was living and well at 89; the father died at 60, the cause of death not known; two brothers were living and well; one brother died of pneumonia; there were no sisters; the wife died at 38, cause of death not known; there were two children, both of whom were living and well.

The history of the antecedents, so far as the patient was able to remember, revealed no nervous or mental trouble in the family, on either the paternal or the maternal side. There was no history similar to the condition from which the patient suffered in any member of the family.

The personal history showed that the patient had always been a strong, healthy man, and had never been seriously ill prior to the onset of his present trouble. He had the usual exanthemata of childhood, from which he made good recoveries without sequelae. Twenty-seven years before he had an attack of malaria, but was able to be about, and was at no time seriously ill. He had no other history of illness. He had suffered no serious injuries of any kind, and never had been operated on. His habits had always been moderate. He used very little coffee, no tea, and no alcohol, but had been for some time a heavy user of tobacco, and gave a history of more or less persistent constipation. Prior to the attack his appetite had been good, and he had slept well. He denied any venereal trouble, nor could any be elicited from laboratory findings. He had an inguinal hernia, but it was not troublesome or annoying. He had occasional attacks of tonsillitis, and he had hemorrhoids.

To the best of the patient's knowledge, he was in perfectly good health three years before. About May, 1912, following an exposure to cold while working in water as a ship's carpenter, he noticed within a few days a marked weakness of his neck muscles, and within two weeks he had developed a condition similar to the one from which he suffered when examined. The symptoms came on rather slowly, and were associated with slight pain and soreness in the muscles of the shoulder and the back of the neck, followed by a general muscular weakness, and particularly by an inability to close his mouth, to swallow solid foods, or to drink liquids. This condition progressed until the patient became very emaciated, and was almost unable to take nourishment at all. This illness lasted a few weeks, when he began to improve and recovered his strength; and within six months after the onset of his primary symptoms, he claimed that he was perfectly well, and during the interim he did not recall that he had felt any weakness of muscles or any inability to swallow or to speak.

Up to February, 1915, he was in his usual good health, and was able to attend to his work. During the month of February, 1915, without apparent cause, unless it was a slight cold, as he expressed it, following exposure, the abovenamed symptoms began to return. There was pain in the jaw, but not of a severe type. Gradually the muscles of the neck and throat became weak, and he was unable to move his jaw or to swallow or drink with his usual ease. At the time of his admission into the hospital in November, 1915, he had a slight ptosis of the right eyelid. The weakness that he complained of was most marked in his neck muscles, but the entire musculature was more or less involved, and during the time that he was under observation he was

* Read before the Section on Nervous and Mental Diseases at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

unable to walk, to make any marked exertion, or to eat a full meal. After a good night's rest the patient was very much better, but as the day went on his weakness became more marked. At the beginning of a meal swallowing and other movements of the jaw were comparatively free; but after a few moments the muscles tired, and he was unable to take further nourishment. It was difficult for him to blow his nose, and he was obliged to have his mouth closed and his chin held in position until he could force air through the nostrils. After talking for a few moments he was obliged to hold his lower jaw with the aid of his hand. Aside from this general weakness, and particularly of the muscles of the neck and jaw, and his inability to finish his meal, the patient felt fairly comfortable.

Neurologic examination seemed to show the mental condition to be normal for a man of his age. His speech was rather indistinct and slow, rather characteristic of his muscular weakness.

The first cranial nerve was normal. The second showed that vision was fair in both eyes and he had normal eyegrounds.

The ocular muscles, controlled by the third, fourth, and sixth nerves, were normal, with the exception that the right rectus was somewhat lax. He had no double vision and no nystagmus. The pupils, however, were irregular and slightly unequal, the right being larger than the left; both reacted sluggishly to light, but were normal for accommodation.

With the exception of a slight ptosis of the right eyelid, and the impairment of the external rectus muscle on the right side, there was nothing further to implicate the third and sixth nerves.

There was an apparent atrophy in both masseter muscles, and a marked inability to move the lower jaw. As a result of this involvement of the fifth nerve the mouth was open most of the time.

The seventh nerve presents no irregularities.

The eighth nerve showed that there was a moderate amount of deafness in the left side.

The tongue and palate were apparently normal. There was no facial or tongue tremor, except as was shown by his inability to swallow, and the fact that his speaking voice was below par, and any continued effort on his part to talk was accompanied by rapid muscular tire.

There was apparently no sensory disturbance to cotton, pinpoint, deep and superficial muscle sense, or vibration sense.

Fig. 1. — Photograph, natural size, of tumor removed at necropsy, situated in thymic region surrounded by firm capsule, with no perforations.

The biceps reflex was present and also the triceps. The supinator was active, and the patellar, active plus. The Achilles and abdominal and cremasteric were not obtained.

Coordination as far as was determinable was unimpaired.

The blood count was practically normal. A laboratory investigation of blood and spinal fluid showed the Wassermann negative. The urinary findings were also negative, eliminating any probable disease of the kidneys.

During the patient's entire stay at the hospital there was but little change from week to week in his condition. At times he felt better and stronger, and was able to move about in bed better at times; but there was no evidence of any marked change, with the exception of his dyspnea. On Dec. 10, 1915, he complained in the afternoon of a general fulness of his chest, an evident dyspnea. A hypodermic of $\frac{1}{100}$ grain of atropin was given, with the hope that it might relieve his distress. Ten minutes after the hypodermic was given he died suddenly.

A necropsy was made on Dec. 11, 1915, twenty-four hours after death, the report of which is as follows:

The body is well developed and fairly well nourished; pupils, 5 mm. in diameter and equal, no edema, no special marks.

The peritoneal cavity contains no excess fluid and no adhesions. Intestinal surfaces are smooth and glistening. Appendix is 8 cm. in length and free. Diaphragm extends to the fifth rib on either side. Mesenteric lymph nodes are firm and slightly enlarged.

There are no adhesions and no excess fluid in the pleural cavities.

The pericardial cavity contains about 3 c.c. of thin, clear fluid.

The heart weighs 275 gm. The epicardium is smooth and clear. The mitral valve shows a slight diffuse thickening. There are no lesions in the other valves. The endocardium is smooth and clear. The muscle is pale and firm. The root of the aorta shows no lesions.

The left lung shows a firm, whitish thickening of the pleura at the apex; thickness, about 6 mm.; dimensions of area, 2 by 1 cm. The lungs crepitate throughout. They are very deeply colored with black pigment. Throughout the lungs is a considerable number of small miliary nodules of firm consistence. In the apexes the miliary nodules show firm fibrous tissue of a black color. The cut surfaces of the lungs are fairly dry. The right lung weighs 375 gm., left 362 gm. There is an old healed apical tuberculosis of the lungs; old healed miliary tuberculosis of lungs.

The spleen weighs 130 gm. The capsule is wrinkled and slightly thickened. The pulp is fairly firm. The cut surface shows prominent lymph nodes.

The liver weighs 1,300 gm. The capsule is smooth and glistening. One small miliary nodule is noted on the anterior surface, resembling in structure those described in the lung. The cut surface shows no special markings. Lymphorrhages are numerous in the liver, and a few were found in the suprarenals.

The pancreas, gastro-intestinal tract and suprarenals show no gross lesions.

The left kidney weighs 108 gm.; the right, 112 gm. They are of a dark red color. The capsules strip readily, exposing smooth surfaces. The cortices are about 7 mm. in thickness and of a dark red color.

The bladder and genitalia show no pathologic condition.

The aorta is fairly elastic. A few very small, elevated, yellowish areas are noted.

A tumor is found in the thymic region, just above the heart and immediately behind the sternum. It is embedded in loose connective tissue, and is not adherent to the sternum or to any of the thoracic viscera. Microscopic examination of the adipose tissue surrounding the tumor shows the usual senile thymic tissue. The tumor is easily shelled out of the connective tissue envelope. It weighs 60 gm., is 6 cm. long, 3.5 cm. deep anteroposteriorly, and about 4 cm. in transverse direction. It is completely enclosed in a strong fibrous capsule about 0.5 mm. thick, which is not perforated at any point. The cut surface is of soft consistence, somewhat softer than the thymus of a child, and is studded with hemorrhagic areas. The cut surface is of a light gray color except in the portions containing blood. No lobules can be seen. (Compare Figures 1 and 2.)

Microscopically the tumor is seen to consist of fetal thymic tissue, that is, it shows epithelial cells in solid masses or arranged in a network among which there are varying numbers of small lymphocytes. The tissue corresponds to the fetal thymus at the stage when the epithelial organ is transformed into a lymphoid organ. No Hassall's corpuscles are present.

No lesions are found in the tissues of the scalp. The dura mater readily separates from the calvarium. The sinuses of the dura show no lesions. The subarachnoid contains a considerable amount of clear fluid in its dependent portions. The arteries of the brain are soft. The ven-

tricles of the brain are not dilated and appear normal. A central coronal section through the brain shows no lesion.

The lumbar and thoracic part of the cervical spinal cord are removed. The meninges show no lesions. Sections of the cord show no gross lesions, except a possible softening in the anterior horns of the cervical cord.

The muscles examined were a few pieces from the sternothyroid and sternohyoid. These did not show lymphorrhages.

Of fifty-six necropsies on cases of myasthenia gravis that have been recorded since 1901, seventeen showed hyperplasia or persistence of thymus, and ten of the fifty-six cases showed a thymic tumor. This gives a thymic involvement in nearly half of the cases. All the thymic tumors except one have been of the benign type, somewhat similar to the case reported. The authorities seem to be very general in their statements that these tumors are special forms of hyperplasia, and not true neoplasms, and therefore can best be designated as benign thymomas.

The literature on the thymus gland is neither convincing nor satisfying. The fact seems to be generally accepted that the thymus and the thyroid are interrelated, particularly from a circulatory point of view. The assumption is quite clear, too, that the thyroid is responsible for disturbances of bodily metabolism; and it seems reasonably safe to assume that the thymus is in some way responsible for like conditions. Some investigators believe that the thymus and the lymphatic system are coordinated in function, and that the thymus itself is probably concerned in the production of lymphocytes. It is further probable that the thymus has some correlated effect with other ductless glands; and, like other glands, the thymus may be the primary seat of the attack. This does not necessarily mean that the thymus itself is an independent organ, but that it has its influence in the ductless gland chemistry, and certain persons have disorders and hyperplasias or diseases of the thymus, while in others the same conditions cause disturbance of other glands, as the thyroid or the suprarenals. One can only theorize on the whole situation concerning the dependence of the thyroid, thymus, and suprarenals, one on the other. The condition which we look on as status lymphaticus is something that we know very little about. We are led to believe from various sources that this condition may cause death under certain surroundings or circumstances. The same applies to the thymus, that there may be a status thymaticus or, as has been more aptly expressed, a status thymicolymphaticus. Some investigators do make a definite distinction between status thymicus, status lymphaticus, and status thymicolymphaticus; but this distinction can be demonstrated only after death. The group of symptoms which occur before death is not very readily differentiated.

Fig. 2.—Cut surface of tumor shown in Figure 1. No lobulation; numerous hemorrhagic areas plainly visible.

The presence of a thymus in a person of middle life, particularly when associated with an exophthalmic goiter, is a very strong index that the thymus is the main disturbing element; and not infrequently the operator who removes the thyroid gland without recognizing the presence of a thymus hyperplasia produces a change in the circulation of the thymus which, not infrequently, is accompanied by sudden death. There is every reason to suppose, therefore, that sudden deaths in these cases of myasthenia gravis in which the enlarged thymus is present may occur, as in the case earlier recorded in this paper, and the death be a thymic death.

The relationship between thymic disease and the central nervous system has never been established, unless it be that certain types of people who have inherent tendencies or inherent defects may be subjects of hyperplasias of the thymus, as well as other organs; and this, in turn, may have produced a change in the blood stream of the brain stem, either from indirect pressure or from substances thrown into the circulation which affect the respiratory or circulatory centers. The majority of thymic deaths in young people and children are probably due to pressure effects, yet this does not eliminate the probability of toxins in the blood stream, as well as pressure from overgrowth. This theory is based on the experiments of a few of the observers who have found nerve lesions, particularly in the gray cells, in people who have thymoma.

## ABSTRACT OF DISCUSSION

Dr. Walter B. Swift, Boston: It has been held by Brown of Brooklyn that thymus enlargement is an etiologic factor in stammering. I should like to ask Dr. Jones if any of the cases he knows about have stammering connected with this lesion.

Dr. R. Foster Kennedy, New York: In my first two years at the National Hospital I did not see any case of myasthenia gravis. Later we had nine cases inside of eighteen months. Seven of these patients died; we succeeded in getting six postmortem examinations. Of the six cases, five had thymic persistence. In practically all of these the thymus was as large as my hand and was as thin as tissue paper, comprising a thin sheet of glandular tissue which spread down over the whole of the upper part of the pericardium. While it was not clear to us a half dozen years or so ago what the connection between the clinical disease and these extraordinary pathologic findings might be, it did occur to our dull intelligence that it was more than a coincidence, that there must be here some relation between cause and effect. I have seen only one case of myasthenia gravis in a woman over 25. They were nearly all young women; the men patients were always in middle life. Sir William Gowers published a group of cases of three men as I remember, which he calls pseudomyasthenia gravis, as a result of gasoline poisoning, or as he called it, petrol poisoning.

Dr. C. Eugene Riggs, St. Paul: I have under my care at the present time a case of myasthenia gravis in a woman who is over 25 and under 30.

Dr. George A. Moleen, Denver: A case came under my observation as a dysentery and in Colorado when we find dysenteries, emaciation and marked prostration one of the first assumptions is "tuberculosis." On inquiry it was learned that it was not lung trouble for which this patient came West, but a muscular weakness. He had been examined in Chicago by a very good man some twenty-four years before and the condition was then pronounced a progressive muscular atrophy; six years later it was called myasthenia gravis. The myasthenia was evident, and it occurred in epochs. The acute attacks occurred in periods of two or two and one half years, with all the bulbar and ocular symptoms, then he would gradually recover, gaining in strength. But since the last two or three attacks prior to observation he had not recovered completely. Examination revealed tenderness under the right

lower costal margin at that time, and very fortunately segregation of the urine revealed pus coming from the right kidney. Exploratory operation revealed a large perinephritic abscess which compressed the right suprarenal against the lower surface of the liver on that side. Evacuation and drainage of that caused prompt return of his power. I followed the case for about six months after that, when he returned to Kansas, and took up his occupation. The case was distinctly myasthenic in type, and at that time was reported as a case of Addison's disease from a perinephritic abscess.

DR. WILLIAM A. JONES, Minneapolis: In the literature on myasthenia gravis I found nothing relating to speech defects, particularly stammering. I have seen but few cases of what I believed were true myasthenia gravis, and the two or three I have in mind at the present time have manifested no marked change, and are still living fairly comfortable lives. The tumor in the case I reported was about the size of a large Damask plum, and naturally occupied a considerable space in the mediastinal region.

## EXPERIMENTAL STUDIES OF INJECTION OF THE GASSERIAN GANGLION

### CONTROLLED BY FLUOROSCOPY *

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A perusal of the contemporaneous literature leads to the conclusion that gasserian ganglion operations and intraneural or intraganglionic injections of alcohol are the procedures of selection for the treatment of trifacial neuralgia.

The technical difficulties of operations on the gasserian ganglion or its sensory root and the relatively high mortality attending such operations, except in the hands of a very few surgeons, made welcome a procedure which offered at least alleviation without danger, disagreeable sequelae or great difficulty.

The injection of pain deadening and nerve destroying substances into the trifacial nerve dates back to 1874, when Bartholow reported successes with the injection of chloroform. Successful results with the injection of osmic acid were recorded through a period of years following Billroth and Neuber in 1884, by Eulenberg, Shapiro, Bennet, Murphy, Wright and others.

It was not until Schlösser reported the results of his experiments in 1903 that persistent efforts were inspired for the development of a technic for successful alcoholization of the fifth nerve. About the same time further impetus was given by the work of Ostwald, Levy and Baudoin. The technic of the latter two was adopted by Patrick, Hecht, Sicard, Harris and others. The development of the technic and the reports of its successful employment by these workers has placed this procedure permanently among the methods employed for the effective relief of trifacial neuralgia.

It is not within the scope of this paper, which deals with a technical problem, to describe the details of the development of methods of injection and their results.

Suffice it to say that in the hands of operators who have had wide experience and who have developed consummate skill, all these methods are uncertain. As Patrick[1] says, "It requires little experience or reflection to realize that no one can uniformly touch with a needle a given point 4 to 5 cm. (2 inches) below the surface."

The uncertainty of prevailing methods led us to pursue some experimental work on which this paper is based. We are concerned with reaching the gasserian ganglion through the foramen ovale. Part of the experiments deal with a route which Harris uses in his technic. He, with Patrick and others, employs with little modification the course adopted by Levy and Baudoin. The needle is inserted in the sigmoid notch from 1.5 to 2.5 cm. anterior to the anterior root of the zygoma or from a point immediately in front of the preglenoid tubercle, to one a centimeter farther forward. The needle is directed somewhat backward and slightly forward, and at 4 cm. should reach the nerve. The needle arrives at the foramen ovale after having passed through the skin, subcutaneous tissue, the zygomatic insertion of the masseter, posterior portion of the

Fig. 1.—Lead strips in the groove of the eustachian tube, showing the foramen ovale immediately external and anterior to it.

temporal tendon, superior border of the external pyterygoid muscle and lastly in the front of the temporo-maxillary articulation. Patrick[2] has called attention to the fact that:

> A really valuable landmark is the external pterygoid plate. The foramen ovale, at least in the vast majority of cases, is directly back of this and at about the same depth. Hence I aim to strike this plate close to its posterior edge and then work backward until the needle slips by it. Then I have every reason to believe that the point of the needle is just in front of the nerve and at about the proper depth.

Patrick gives a very valuable guide to be used in determining the approximate depth of the foramen from the surface. Analysis of his measurements in

* Read before the Section on Nervous and Mental Diseases at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

1. Patrick, Hugh T.: The Treatment of Trifacial Neuralgia by Means of Deep Injections of Alcohol, THE JOURNAL A. M. A., Nov. 9, 1907, p. 1567.
2. Patrick, Hugh T.: The Technic and Results of Deep Injections of Alcohol for Trifacial Neuralgia, THE JOURNAL A. M. A., Jan. 20, 1912, p. 155.

eighty cases indicates the following: When the interzygomatic diameter is 5 inches, the nerve will be found at 4 to 4.25 cm. When the interzygomatic is 5½ inches, the nerve is apt to be at over 4.5 cm.

If one follows these various details of procedure, the needle may be inserted to a place in very close proximity to the foramen, and we are concerned with making this proximity as great as possible.

A study of the anatomy of the parts about the foramen ovale shows that along the line of the sphenopetrosal fissure the edges of the adjacent sphenoid and petrous-temporal bones are beveled "so as to form a groove which extends from the root of the inner pterygoid internally, to the inner side of the base of the alar spine externally . . . in the groove is lodged the cartilaginous part of the eustachian tube. . . . Between the root of the external pterygoid plate and the alar spine there are two foramina which lie directly in front of the sulcus of the eustachian tube. Of these the larger and anterior is the foramen ovale." (Cunningham.)

A view of a sagittal section of the skull at the plane of the foramen ovale shows that it is directly in front of, above and internal to the eustachian tube. A study of both sides of fourteen skulls showed that however the groove for the eustachian tube varied in its course, the bone separating the sulcus from the foramen varied in thickness but from 1 to 3 mm.

It follows that to successfully introduce a needle into the foramen ovale it is necessary only to visualize the eustachian tube and to establish certain angles and lines which would by means of the fluoroscope enable one to determine when the point of the needle is in front, above and external to the eustachian tube at a proper depth.

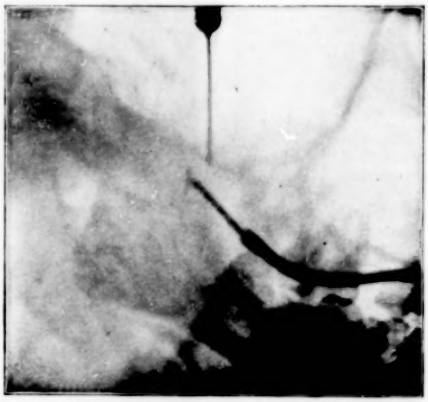

Fig. 2.—Needle in foramen ovale and eustachian bougie in position. The needle can be seen entering the foramen on the linear shadow cast by the structure through the inferior border of the great wing of the sphenoid.

The visualization of the direction and approximate location of the eustachian tube is easily accomplished by the introduction of a eustachian catheter with the assistance of a nasopharyngoscope (so that one is certain of having entered the ostium), and by inserting through the catheter a bougie made of fuse lead or one made of flexible spirally wound gold wire. This, when it is inserted to a depth of about 1 inch beyond the end of the catheter, is about at the beginning of the isthmus of the tube at its entrance into the osseous canal. The course and position of the tube can now readily seen by means of the fluoroscope (Fig. 2).

The rays should enter the head at the opposite occipitoparietal protuberance at an angle of 120 degrees to a coronal section, and at an angle of 45 degrees to a sagittal section of the head. Under these conditions, a needle introduced at the sigmoid notch and taking a direction approximately at an angle of 20 degrees to the sagittal suture and 130 degrees to the coronal section would be directed toward the foramen ovale and be projected on the screen as traveling downward toward the eustachian tube, at an angle of 90 degrees from the point of entrance.

If the needle is introduced in this direction to a depth determined by computation from the intertubercular diameter, and does not cross the shadow thrown by the eustachian bougie, it is at its proper depth.

If the rays now be shifted so that they enter in the direction of the needle, the butt of the needle should appear above the eustachian tube, determining its proper height. This leaves undetermined the anteroposterior location of the foramen. The bony structure seen through the inferior border of the zygomatic surface of the great wing of the sphenoid throws a shadow running anteroposteriorly and upward and when visible, the foramen ovale may be found somewhere along its course.

An approximate formula may be formed. If under the above conditions a needle be introduced to a point above the eustachian tube, and to a depth not crossing it, it can be caused to enter the foramen ovale by directing it at points along the described line from before backward. When this line is not visible, the needle may be directed from 0.5 to 1 cm. above the shadow of the eustachian bougie.

A large number of factors entering into the optical physics of the formation of the shadow of the eustachian bougie make the distance between the shadows of the eustachian bougie and foramen ovale vary to such a degree that the actual distance cannot be computed.

On cadaver heads this method offers such assistance that a needle can be successfully introduced into the ganglion on each attempt. When, however, we are dealing with live subjects, a new factor is introduced which for the time precludes the possibility of the employment of this method. We attempted this method in three cases and found that the secondary rays developed in the tissues, principally the brain, diffusing the shadow of the slender needle to such an extent that proper methods of diaphragming must first be developed that will eliminate these rays before the fluoroscopic projection of the eustachian tube may be employed as a means of accurately locating the foramen ovale.

Failing in this direction, we began to study another route.

Härtel[3] has given us a route which has made the approach through the foramen ovale more practical and useful. To Grinker,[4] who first made Härtel's method known to American readers, we are indebted for some of the following description. The needle is

3. Härtel, F.: Arch. f. klin. Chir., c, No. 1.
4. Grinker, Julius: A New Method of Treating Neuralgia of the Trigeminus by the Injection of Alcohol into the Gasserian Ganglion, The Journal A. M. A., May 3, 1913, p. 1354.

introduced through the cheek opposite the alveolar process of the second upper molar tooth. It is guided by means of a finger in the mouth so as to pass between the anterior ramus of the lower jaw and tuberosity of the superior maxilla. "Causing the needle to sweep around the buccinator muscle, the operator pushes it onward between this muscle and the masseter, coronoid process of the lower maxilla and the temporal muscle externally, into the zygomatic fossa. Continuing in the direction upward, backward and slightly inward, the needle now reaches the broad under surface of the great wing of the sphenoid, having pierced the external pterygoid muscle, which fills the zygomatic fossa."

According to Härtel, the needle points to the pupil of the eye of the same side and on lateral view the needle points to the articular eminence on the zygoma. The needle engages the foramen ovale at a depth of about 6 cm. from the point of entrance.

Maes[5] has found that the foramen was more accessible from a point behind the last molar tooth of the lower jaw than from the point given by Härtel. From a study of forty skulls we found that projecting a pin through the foramen ovale hugging the anterior border of the petrous portion of the temporal bone, the point of entrance would fall in most instances at a point between the second and third molars of the upper jaw.

The depth to which the needle should be introduced may be more accurately estimated by using the data we have derived from an examination of both sides of forty skulls. The distance from the point of entrance of the needle to the preglenoid tubercle, or the alveolar tubercular measurement, was greater than the distance from the point of entrance to the foramen ovale or alveolar foraminal measurement in all but two instances. Of these, one was an anomalous skull, and the other, one in which the intertubercular measurement exceeded 5½ inches. In all other skulls it was found that the alveolar foraminal was less than the alveolar tubercular measurement by from 0.1 to 0.9 cm. Eighty per cent. of the cases showed a difference of less than 0.6 cm., 50 per cent. less than 0.4 cm. Of the cases showing a difference of over 0.6, many occurred where the intertubercular diameter was less than 5 cm., and some where the alveolar tubercular measurement exceeded 5.5 cm. The depth of the foramen from the zygoma did not bear a constant relation to the alveolar foraminal measurement, except in that where the foramen was deeply situated the alveolar foraminal measurement was often inclined to be greater than usual.

The anterior border of the petrous portion of the temporal bone, when the head is viewed exactly laterally through the fluoroscope, throws a shadow easily seen in living subjects. This shadow forms a line which is a direct projection of the shadow cast by a needle entering a point between the second and third molars of the upper jaw. If, therefore, a needle be introduced here and pushed, according to Härtel's directions, to a depth computed by our measurements, it will be approximately at the foramen ovale. If now the needle be directed so that a projection of the shadow would follow the shadow of the anterior border of the petrous portion of the temporal bone, or 1 or 2 mm. below it, the anteroposterior and superior planes of the foramen ovale will be accurately located. The internal and external planes of the foramen ovale cannot be located by the fluoroscope, and one is guided by Härtel's direction to point at the pupil of the same eye and by the pterygoid bone. The superior inferior plane may be further determined, if necessary, by employing a shadow of an opaque eustachian bougie, when the needle should be above it, and here the secondary rays do not interfere with the visibility of the shadow of the needle.

In our experiments, employing both sides of the fourteen heads, no difficulty was experienced in introducing the needle into the foramen ovale on each attempt. It might be said that the introduction of a needle into a given point of a cadaver which cannot bleed, suffer pain or experience injuries of various important structures, is quite a different matter from accomplishing the same result in the living subject.

Fig. 3.—Needle inserted through the foramen, resting on the anterior border of the petrous portion of the temporal bone.

We have had only one opportunity of using this method on a living subject. Here the lower and middle branches of the ganglion were easily reached and injected, with immediate relief of pain and good analgesia.

In conclusion we may say that employing the shadow cast by the anterior border of the petrous portion of the temporal bone, on a fluoroscope, as a line of orientation injection of the gasserian ganglion by Härtel's method is made more certain.

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5. Maes, Urban: Surg., Gynec. and Obst., 1915, xxi, 449.

## ABSTRACT OF DISCUSSION

DR. HUGH T. PATRICK, Chicago: It remains to be seen whether Dr. Pollock's method will prove to be a practical one to be used in the majority of these cases. The method of Härtel, under proper guidance, perhaps according to the method which Dr. Pollock has devised, may prove to be an entirely practical and practicable procedure; but I must say that under the rules which Härtel himself originated, I never had the courage to attempt to inject the gasserian ganglion.

I may exaggerate the dangers a great deal but I do not really want to demonstrate to myself that it is a dangerous procedure. The operation has, of course, been done successfully a number of times, and I hope under the scientific guidance of Dr. Pollock we may be able to do this accurately and without danger. And this is a consummation devoutly to be wished. Injection of the ganglion by the Harris method is disappointing to me. I have tried it a number of times; occasionally the needle goes through the foramen ovale and

reaches the gasserian ganglion or its vicinity with a facility comparable to putting one's hand in one's pocket. And the next time the needle does not find the foramen at all.

Dr. Julius Grinker, Chicago: While in Berlin in 1902-1903 I saw Härtel demonstrate his method, which was new then. I also saw the cases as he demonstrated them before the Berlin Surgical Society. There were five patients, each one having been afflicted with a very formidable sort of tic douloureux and each one having received a number of peripheral nerve injections without benefit. Relief came promptly after Härtel's injections. The first injections were made, not to relieve neuralgia, but to anesthetize the face for operation. For this purpose Härtel uses small doses of novocain introduced into the gasserian ganglion, which permit operation on any part of the face without a general anesthetic. It was the ease with which he succeeded in anesthetizing the face that led him to adopt the injection of alcohol directly into the ganglion as a means of giving relief for trigeminal neuralgia. My own impression of the method is that it is not more difficult than injection by the Boudouin-Levy method with which Dr. Patrick made us acquainted. When first shown to me, I thought it a rather formidable procedure — to take a needle of such large caliber and bore a hole in the patient's face. Nevertheless we tried it and succeeded in giving relief to many unfortunate sufferers. Härtel uses a very fine needle, so fine, indeed, that it matters little whether you introduce it twenty times or only once. It does no damage if you follow his directions. Nevertheless, I believe a simplified method would be a great advantage. Personally I do not so much fear the difficulty of getting into the ganglion, as the consequences of having entered the ganglion, namely, the corneal ulceration. As a successful gasserectomy done by the surgeon is in many instances followed by ulceration of the cornea, so do we get a similar result after successful injection of the ganglion. And it is this apprehension which has really prevented me from repeating the injection more than twice. In short, I fear the after-effects of a successful injection much more than the difficulty of getting into the foramen.

Fig. 4.—Needle in the foramen ovale, the eustachian bougie in place to indicate the proper height.

Dr. M. A. Bliss, St. Louis: I have felt that the injection of alcohol was a more or less temporary measure. The cells of the ganglion are much more resistant to alcohol than are the fibers of the trunk, according to the observations I have seen quoted. I would like to ask whether in any successful injection of the gasserian ganglion the anesthesia and the relief from pain is reasonably permanent.

Dr. Charles R. Ball, St. Paul: For about eight years I have been making these injections by the Boudouin-Levy method which Dr. Patrick first brought to this country. Injection of the ganglion is no trivial procedure. The procedure is to be entered on with a proper sense of appreciation of the danger connected with it. In the first place we must have the right sort of a needle. I sent to Berlin and procured Härtel's injection outfit; since then I have been using the Härtel needle in all my injections. It has the disadvantage that after you start your direction, the needle is so fine that you cannot change it; therefore if you do not enter the foramen you have to withdraw the needle and start over again. Another objection to the fine needle is that a little bit of blood is liable to cause it to become occluded, particularly if you have squeezed a few drops of alcohol through the end of the needle. Alcohol coagulates blood very readily, and it is most distressing sometimes to find that you are in the correct position, but that the needle is occluded.

In getting into the gland I have had the experience related by Dr. Patrick. When I heard Dr. Harris describe his method it seemed good, so I practiced on a cadaver and found no difficulty in entering the foramen ovale from the side according to the Harris method, also no difficulty in entering the foramen ovale from the front according to the Härtel method. But I noticed that many times when I went into the foramen of a living subject this did not mean that I had got into the ganglion by any means, but that the end of the needle was under some dense tissue, and this tissue prevented me from injecting the ganglion with alcohol.

The best ganglion injection I ever made was an accidental one. I was trying to inject the third branch of the nerve according to the Levy-Boudouin method. I introduced the needle to the point where I thought the exit of the third branch ought to be and injected about 1 c.c. of a 90 per cent. solution of alcohol. The patient immediately went into collapse, became unconscious, had paralysis on that side of the face, and I thought she was going to die on the table. She was over 80 years old. The facial paralysis was the most complete I ever saw, but this did not bother her a bit; we had a beautiful anesthesia of the three branches of the fifth nerve and she was highly pleased and delighted with the results. Last winter I had one of the most intractable cases that I have ever encountered. I am sure that I entered his foramen ovale according to the Härtel method on two different occasions and injected alcohol. On one occasion I got facial paralysis and nystagmus, anesthesia of all the branches of the fifth, and temporary anesthesia of the cornea, and yet, with the exception of the partial anesthesia of the cornea, the pain still continued.

Dr. Ernest Sachs, St. Louis: Dr. Ball is frank enough to tell us of the untoward accidents. I should certainly hesitate to undertake any procedure when I had such complications. I judge that what happened in Dr. Ball's case was that when the alcohol was put into the cavum meckeli it went where the cerebrospinal fluid goes; when you open the cavum meckeli you always get discharge of cerebrospinal fluid. I have had no experience with injection of the ganglion; I would not think of doing it or trying it. Gasserectomy, when carefully done, is not the dangerous operation that it is generally supposed to be. About a month ago Dr. Harvey Cushing reported about 150 gasserectomies without a single death, no complications, except one or two corneal ulcers which healed, and no blindness. It would seem to me that results of that sort are far better than doing an operation which is absolutely in the dark and very dangerous.

Dr. George Morris Dorrance, Philadelphia: In cases of operation on the face, we inject the ganglion with novocain to obtain the required anesthesia. We injected 300 cadavers, making 600 injections. In some cases we went under the

ganglion and that made us fail; in others, over the ganglion, sometimes hitting only a part of the ganglion. I usually get it the first or second time and it comes easy after doing a few. You should, of course, inject novocain before the alcohol. If you get complications, you do not inject the alcohol but withdraw the needle and make a second puncture. If the neuralgia is confined to the third division, you do not necessarily inject the ganglion, but the third division only. However, it is not difficult to inject the ganglion. We do have recurrences, but when the operation is done right along, the procedure is not so difficult as has been intimated by Dr. Sachs. Sometimes we do find a difficult case; sometimes the material will not diffuse through the ganglion easily. Be sure to use the novocain first. It saves getting into these terrible complications.

DR. LEWIS JOHN POLLOCK, Chicago: It was not my intention either to provoke or to enter into a general discussion as to the merits of alcoholization of the component portions of the nerve or the ganglion itself. I had felt, contrary to the impression of Dr. Dorrance, that injection of the ganglion was difficult, irrespective of any procedure known at the present time; and that if a method could be devised which would make it more certain and less liable to be followed by any untoward results, we would be doing some service. The dangerous zone in doing the Härtel injection lies not anteriorly, but posteriorly, inferiorly and internally. If the needle is kept so that it enters not more than one or two millimeters below the shadow of the anterior border of the petrous portion of the temporal bone, it cannot go either too far back or too low down. Therefore, it will strike either the external plate of the pterygoid or the large wing of the sphenoid and you can do no damage to the structures here. As to Dr. Grinker's apprehension concerning the production of corneal ulcers, one should, of course, mention this complication under the discussion of advantages and indications and contraindications of injection of alcohol, and other methods of surgical treatment of trifacial neuralgia as well. In reply to Dr. Bliss, I would state that the ganglionic as well as the intraneural injections are only temporary. But in experimental work done by Byrnes it has been found that the sensory cells of the ganglion itself do degenerate and that this practically puts the nerve out of commission, more so than injections into the nerve itself. Of course, it is not necessary to inject the ganglion by this method; you do not have to push the needle in all the way; you can inject the lower branch alone, and that is the branch which is difficult to inject. The middle branch is easily injected. And it is not necessary to include all the ganglion in the injection if one proceeds carefully; if one is guided by proper measurements he will be able to separate the injection of the third branch from that of the first. I was very glad to hear Dr. Dorrance bring out the point that one can inject the third branch alone.

Referring to Dr. Sach's remarks, from a review of the literature as well as from personal observations, I feel certain that these untoward accidents do not result in permanent damage and, further, that they occur but very seldom, and exceedingly seldom as compared with the general results obtained by all general surgeons collectively in operations on the gasserian ganglion or its sensory root.

# A FURTHER NOTE ON THE DIAGNOSTIC VALUE OF RETROBULBAR NEURITIS IN EXPANDING LESIONS OF THE FRONTAL LOBES

## WITH A REPORT OF THIS SYNDROME IN A CASE OF ANEURYSM OF THE RIGHT INTERNAL CAROTID ARTERY *

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Difficulty in the diagnosis of cerebral lesions varies directly with the degree of physiologic latency possessed by the affected brain area.

Again, even when tissue subserving active function becomes irritated or destroyed by disease, our difficulty in decision as to the part involved depends largely on the degree of objectivity in the phenomena produced.

Fig. 1.—Inferior aspect of brain, showing aneurysm of right internal carotid artery. The optic nerves have been removed and would lie on the aneurysm, between it and the observer.

The vertigo accompanying cysticercus of the fourth ventricle eludes the descriptive powers of the majority of patients, nor are the uncinate fits associated with irritative processes in the hippocampal gyri more easily portrayed: in consequence of the difficulty in describing concretely such subjective states, occurrences of the most precise character are apt to be misinterpreted by even alert observers. In the recognition of disease affecting the frontal lobes there is ample illustration of the truth of these general propositions. These gyri are not only highly latent, but such exiguous symptomatology as has been ascribed to them consists mainly of certain ill-defined abnormalities of mentality and conduct.

It is, therefore, proposed in this short communication again[1] to draw attention to a syndrome referable to the inferior frontal areas, a clinical picture also which is capable of such objective investigation as to facilitate decisively the diagnosis of pressure-producing lesions of these parts.

The sign of which I wish to speak is the occurrence of a true retrobulbar neuritis, with the formation of a central scotoma and primary optic atrophy on the side of the lesion together (if pressure be sufficiently great) with ipsolateral anosmia and papilledema in the opposite eye. The mode of production of this situation may be illustrated by the case of a woman, aged 53, kindly referred to me by Dr. John Shannon in

* Read before the Section on Nervous and Mental Diseases at the Sixty-Seventh Annual Session of the American Medical Association, Detroit, June, 1916.

1. Kennedy, Foster: Retrobulbar Neuritis as an Exact Diagnostic Sign of Certain Tumors and Abscesses of the Frontal Lobes, Am. Jour. Med. Sc., September, 1911.

February of this year. This patient complained only of blindness in the right and decrease of vision in the left eye. The history was as follows:

All her life she had been apparently strong and of good physique and health; she had borne three children, all of whom were healthy. There had been no miscarriages. In September, 1915, without any previous premonitory symptoms, she found that she was not seeing clearly with the right eye. This symptom was definite from the first and progressed from week to week. An examination at that time showed, first, that there was an enlargement of the right blind spot and, later, the definite formation of a small central scotoma, complete for form, and a larger scotoma encircling the other, complete only for color. This central visual defect became, as the weeks passed, more pronounced until, at the end of two months, the patient was able only to see moving objects in the periphery of the right visual field. Most properly her frontal and sphenoidal sinuses fell under suspicion. Roentgenograms were taken which failed to demonstrate any abnormality of these parts. However, lest a mistake should have been made in the radiographic deductions, an exploration of the sinuses was performed, with negative results. There were no other subjective symptoms at that time, but the reaction of the right pupil was diminished in extent; the pupil reacted to light quickly, though with small amplitude, but speedily rebounded, the degree of illumination having been maintained the while. This phenomenon has been called the retrobulbar pupillary reaction, in that it occurs apparently exclusively in conjunction with retrobulbar neuritis. The existence of this latter condition was further demonstrated by the fact that the right optic nerve, as seen by the ophthalmoscope, showed a distinct pallor in its outer part. The patient remained well with the exception of occasional very slight headache.

This headache was adjudged to be the result of the various sinus operations and so excited but little comment. The patient never had experienced headache throughout the whole of her life. In February, 1916, when shopping, she noticed slight dimness of vision affecting the left eye. A perimetric examination, carried out that day by Dr. Shannon, revealed an enlargement of the left blind spot, which in the next three weeks increased in size to form a central scotoma in the left visual field, in a manner precisely the same as had occurred on the right side six months previously.

The diagnosis made by various observers at that time was that the patient apparently was the subject of a so-called von Leber's optic atrophy. It may be pointed out here that this group of atrophies is indeterminate and vague, and that the etiologic factor is only presumed to be obscurely toxic. When she came under observation in February, however, it appeared certain that a toxic factor would not operate by attacking and destroying a single optic nerve and then resume its activity on the other six months later. A disseminated toxin has symmetrical and synchronous results.

A careful examination then revealed the fact that previous to her attack of September, 1915, she had had three transient attacks of double vision, and that after that date she had been troubled with frequent transient numbnesses in both hands and feet, these being rather more evident on the left side. Neurologic examination then showed the condition of the right pupil to be as already described. A similar state affecting the left pupil was incipient. A very slight haziness was made out on the upper nasal margins of both disks. The physiologic pit in each was clear, the lamina cribrosa evident, and the blood vessels undisturbed.

Her sense of smell was acute in both nostrils. No nystagmus, strabismus or diplopia. The hearing was good. The area of distribution of the fifth nerve was unaffected. Repeated examination gave rise to the suspicion that the lower part of the left side of the face was less strong than its fellow.

There was a well-marked fine tremor in the right hand when held outstretched. This was quite constant, was diminished by purposeful movement, and never affected the left hand. It was thought there was a little weakness in the left grasp.

The deep reflexes on the left side were rather doubtfully greater than those on the right. The abdominal reflexes at the beginning of the examination were on each side explosively brisk, but repeated stimulation, first of the right side then of the left, maintained over a period of seven minutes, produced an important and interesting situation; at the end of that time the abdominal reflexes on the right side were almost as active as at the beginning of the experiment, whereas those on the left side had completely disappeared.

Fig. 2.—Section through brain showing upper aspect of aneurysm. Notice compression of right caudate nucleus and capsule, with enlargement of anterior horn of right lateral ventricle.

The plantar reflex on the left side was very sluggish and of equivocal type, that on the right was invariably flexor. These facts led to the postulate that the motor fibers subserving the left side of the body were slightly deteriorated in function. A cause capable of producing the blindness and the very minute degree of left-sided hemiparesis would necessarily be one pressing downward on the optic nerves and upward on the motor fibers coming from the right side of the brain.

Furthermore, the lesion would have to be of an expanding character and so capable of exerting pressure in different directions. In one of the Roentgen-ray plates a slight shadow was seen in the frontal region, a shadow which seemed to support the theory that the patient was the subject of a tumor lying at the base of the right frontal lobe. The fact that the tumor was sufficiently large to reach from the right to the left optic nerve and that six months were required for symptoms to be developed on the left side after the affection of the right, together with the entire absence of the generalized symptomatology associated with the development of brain neoplasm—all these considerations pointed to the benignity of the growth. It appeared that, in all probability, the tumor would turn out to be an endothelioma, a type of neoplasm of slow growth, frequently sufficiently dense in structure to give evidence of its presence by radiograph, and, by reason of its very gradual enlargement, capable of becoming of great size without at the same time producing marked cerebral symptoms. The brain tissue in such cases is given sufficient time gradually to accommodate itself to the encroachments of the foreign

body and so there is produced no more than a very slight deterioration of function.

One may point out here the fact that the patient was able to smell distinctly in each nostril, a circumstance which occasioned the observer no little surprise. A growth sufficiently large to compress both optic nerves might have been considered capable of compressing both olfactory tracts. The other circumstances of the case, however, so strongly pointed to the existence of tumor formation in the situation mentioned, that operation was decided on and carried out. Dr. Elsberg exposed and elevated as far as possible the right frontal lobe and succeeded in demonstrating a large periphery of the sublying bone. On the inner surface, near the falx, some pinkish-gray, gelatinous-looking tissue was seen, which was thought by us to be the outlying part of a glioma, the central origin of which could not be brought into view.

A decompression operation was consequently carried out without, fortunately enough, any attempt being made to remove the growth. The patient recovered excellently from the immediate effects of the operation and remained feeling perfectly well for some two and a half months, with the exception of some doubtful further reduction of vision in the left eye. At the end of this time, however, it was discovered that complete anosmia had occurred, which gave rise to the belief that the tumor had increased very considerably in size. A week after this examination the patient fainted one morning, there was a slight convulsion, chiefly on the left side of the body, the coma deepened and death occurred six hours later.

An examination of the brain revealed a ruptured aneurysm of the right internal carotid artery about the size of a small walnut and of a solid consistency, owing to contained fibrinous matter. This aneurysm caused marked pressure on the right optic nerve, just in front of the chiasma, and, to a lesser degree, on the left optic nerve also. Upward and to the right it had succeeded in compressing descending fibers from the right motor area with some deformation of the anterior part of the right caudate nucleus. The anterior horn of the right lateral ventricle was considerably larger than its fellow.

This case is shown for two reasons: first, because of the remarkable rarity of aneurysms of a right internal carotid artery; and second, and chiefly, because, as has been said, its symptomatology offers a very important clue to the diagnosis of expanding lesions in the subfrontal area. Papilledema is now generally believed to be the result of the forcing of fluid out of the cerebrospinal pond down the vaginal sheath of the optic nerve to the nerve head. There it accumulates and is seen by the ophthalmoscope as a localized papillary swelling combined with venous tortuosity. Such is the mode of production of papilledema brought about by the presence of an expanding lesion anywhere in the cranial cavity, so long as this lesion does not take origin from the beginning directly in contiguity with the optic nerves themselves. When this latter phenomenon occurs, a completely different series of events takes place. Instead of fluid being forced down the vaginal sheath there is an obstruction on the vaginal sheath preventing the possibility of such an occurrence. Also the growth, by its pressure on the nerves, causes degeneration to occur directly in the nerve itself. The order in which the fibers of the optic nerve become affected is constant.

We are aware of the existence of varying degrees of physiologic delicacy in the optic nerve bundles, according to the retinal region in which they originate; parallel degrees of susceptibility to trauma would likewise appear to occur in the same fibers. That is to say, the macular bundle which subserves central vision, while not placed peripherally in the nerve, and so not exposed to direct pressure from without, owing to its aforesaid greater vulnerability will always degenerate earlier than the fibers more directly compressed. The result will be rapid loss in acuity of vision and the formation of a definite central scotoma. In the majority of cases this will be accompanied by deterioration of function in the ipsolateral olfactory bulb. This was spared until late in the disease, in the present instance owing to the posterior situation of the lesion.

The diagnosis of aneurysm in this case was, of course, quite unsuspected during the patient's lifetime. The presence of syphilis was entirely excluded by the negative history and annectant circumstances, by repeated examinations of the blood by the Wassermann reaction, all of which were entirely negative, and by the existence of a cerebrospinal fluid normal in all respects with the exception of an increased globulin content, a finding which only served the more to strengthen one's belief in the presence of new growth.

However, the signs which have been here discussed were sufficient to make plain the exact situation of an expanding lesion within the skull cavity. It is submitted that the recognition of this syndrome may do something to elucidate diagnosis in certain obscure cases of frontal neoplasm and, perhaps, at the same time serve in a measure to separate a group of cases from the great generic class of toxic amblyopias.

## ABSTRACT OF DISCUSSION

DR. FRANCIS R. FRY, St. Louis: I think it was Marcus Gunn, an English ophthalmologist, who first affirmed that the "rebounding pupil," the pupil described by Dr. Kennedy, was pathognomonic of retrobulbar neuritis. I think, however, that in so considering it there might be some confusion, because we certainly see a pupil behaving in this way, sometimes unilaterally, where there is no retrobulbar neuritis. And it might only be accepted, I think, as of affirmative value, when the fact of neuritis is otherwise suspected.

DR. FOSTER KENNEDY, New York: I assure Dr. Fry that I would not think of diagnosing lesions of the frontal lobes on the pupillary reaction alone. This would only be of value, of course, in corroboration of other phenomena.

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**An Early French View of Fevers.**—In the Napoleonic era, French physicians made their diagnoses on the nosographic scheme of Pinel, which divided fevers into six classes—the primitive or essential, the inflammatory, the bilious or gastric, the pituitous or mucous, the putrid or adynamic, and the malignant or ataxic. These distinctions, mere fanciful verbiage for active practitioners to pick and choose from in diagnosis, Bretonneau synthesized into the doctrine of the unity of the essential fevers, showing clinically that most of the fevers described by the older observers and listed by Pinel are what we now know to be typhus and typhoid. Bretonneau was the first to elucidate the pathology of typhoid fever (*dothiénentérite*) and to make it known for what it is. Broussais sometimes diagnosed typhoid as "phlogosis of the brain," on account of the terminal delirium, and the Peyer lesions as "intestinal cancer consequent on gastro-enteritis." Bretonneau's correspondence with his pupils, Velpeau and Trousseau, shows that he located and understood the lesions in Peyer's patches as early as 1820. These letters clearly ascertain his priority to Louis, whose great work on typhoid was published, simultaneously with Bretonneau's paper, in 1829. In a letter of 1828, nearly ten years before Gerhard's time, Bretonneau writes the significant sentence: "You will see some day that petechial typhus will be recognized as something different from dothienenteritis." One summer day in 1820, Velpeau, overcome with disgust at the conduct of a necropsy on a typhoid patient, actually leaped into the arena at the Charité and, snatching a scalpel, demonstrated the Peyerian lesions to the amazed Parisians, who, following the teachings of Broussais, believed that these lesions were only the consequence of a simple gastro-enteritis.—"Armand Trousseau: A Master Clinician," Fielding H. Garrison, M.D.

# APPENDICITIS IN CHILDREN *

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So much has been written on the subject of appendicitis that there is little left to be said. If one, however, may be allowed to record his impressions from his personal experience with a very important phase of the condition which I have selected as my subject, I hope it may, at least, furnish a basis for an interesting discussion.

In reviewing our case histories, covering a period of five years, we find the records of 404 cases of appendicitis. This embraces all classes of appendicitis, and includes all ages. Our youngest patient was 4 years of age, and the oldest 63. Of the 404 cases, thirty-seven, or approximately 9 per cent. occurred in children of from 4 to 14 years of age. Two of the thirty-seven children died following operation, giving an operative mortality of 5.4 per cent. In addition to this, one child entered the hospital in a moribund condition, and died without operative interference; and one is known to have died of general miliary tuberculosis since leaving the hospital. The remaining thirty-three patients, so far as we can learn, are living and well. Of the 367 adult cases of appendicitis, there was also an operative mortality of two, or 0.54 per cent.

G. C. E. Simpson[1] reports his conclusions on thirty-four cases of appendicitis in children, and records a mortality of five, or 14.7 per cent. Alexander Mitchell[2] contributes an interesting study of forty cases of acute appendicitis in children, ranging in age from 14 months to 14 years. In all of these forty cases the inflammation had extended beyond the peritoneal covering of the appendix. The mortality of this series was 25 per cent. It is significant to note in this connection that the same author says that during the period covered by this report all of his patients in whom the infection was limited to the appendix recovered. Gray and Mitchell[3] report another series of 200 cases of appendicitis in children; 126 of these were classified as acute. In this group there was a mortality of 15 per cent.

TABLE 1.—CLASSIFICATION OF CASES

| Condition | No. of Cases |
|---|---|
| Chronic simple appendicitis | 6 |
| Chronic appendicitis, following former drainage of abscess | 2 |
| Subacute appendicitis | 2 |
| Tuberculous appendicitis | 4 |
| Acute, nonperforating appendicitis | 4 |
| Acute, gangrenous, perforating appendicitis, with abscess | 13 |
| Acute perforating appendicitis, with general, diffuse peritonitis | 6 |
| Total | 37 |

While I have been unable to obtain any recent statistics from the American clinics, limited to this particular group of appendix cases, I think there is a general feeling that our mortality is too high; and we want to do better. It is somewhat discouraging to have to say to a parent: "Your child has appendicitis. The best we can do for him is to give him one tenth of the chance of recovery that an adult, suffering from the same disease, has." My chief object in writing this paper is to appeal to the general practitioner, and through him to the parent, for a closer cooperation with us in our efforts to give the child with a "belly ache" a better chance to live.

While it is rather difficult to give each case of appendicitis a clear cut pathologic classification, our series, which forms the basis for this paper, may be roughly grouped as in Table 1.

Of the six chronic cases, three had had acute attacks previously. Five of the thirteen patients in the appendical abscess group were admitted to the hospital with more or less diffuse peritonitis; but the general peritonitis subsided under the Fowler-Murphy-Ochsner plan of treatment, so that they came to operation with a circumscribed abscess.

The average duration of illness in the twenty-three cases, when the patients were admitted to the hospital, was six days. Several of the worst cases of general diffuse peritonitis gave a history of only two days' illness; but it is hard to believe that so widespread an inflammation could have developed in such brief time. It seemed more likely that these children had been the victims of appendicitis for several days before their condition was discovered by the parent, or before a physician was called.

TABLE 2.—POSTOPERATIVE COMPLICATIONS

| Condition | No. of Cases |
|---|---|
| Pyelitis | 6 |
| Secondary abdominal abscesses requiring secondary operations for drainage | 4 |
| Postoperative pneumonia, toothache and alveolar abscess | 1 |
| Postoperative obstruction | 1 |
| Cerebral embolism (?) | 1 |
| General miliary tuberculosis | 1 |

Three of our patients had tonsillitis just preceding their appendical attack, and we believe the tonsils were the portal of infection in these three cases. Among the postoperative complications were the conditions given in Table 2.

One of the secondary abscesses sloughed into the bladder, requiring an operation for the drainage of the abscess and closing of the bladder. I have placed cerebral embolism in this list of complications, with the addition of an interrogation point, because we were unable to secure a necropsy, and the diagnosis was made on the clinical evidence only.

In our experience the most constant symptom of acute appendicitis in children is leukocytosis. The total leukocyte count in our series ran from 9,000 to 34,000 per cubic millimeter, with the polymorphonuclears between 72 and 92 per cent. The average leukocyte count is 17,400 per cubic millimeter, with an average polymorphonuclear count of 82 per cent. There was no case that did not show a marked increase of the polymorphonuclears, and only one case in which the total count was as low as 9,000. In a general way the polymorphonuclear count has represented to us the virulence or intensity of the infection, and the total leukocyte count has indicated the resistance or fight that the individual was maintaining against the systemic invasion of the infecting microorganisms. Thus, if the patient should show a very low total leukocyte count, with a high percentage of polymorphonuclear leukocytes, we would be very much discouraged with regard to the prognosis, whatever the clinical symptoms at the time. On the other hand, a marked leukocytosis with a moderately high polymorphonuclear count has always indicated a favorable outcome.

The point that has impressed me most in reviewing our cases is the very significant frequency of perforative appendicitis following purgation. Of nineteen cases in which the appendix had perforated when the patients were admitted to the hospital, sixteen gave a positive history of having been freely purged. In the

* Read before the Smyth County Medical Society, at Marion, Va., May 25, 1916.

1. Simpson, G. C. E.: Brit. Jour. Child. Dis., 1913, x, 400.
2. Mitchell, Alexander: Brit. Jour. Child. Dis., 1912, ix, 355.
3. Gray and Mitchell: Brit. Med. Jour., Feb. 21, 1914.

remaining three cases the record does not mention whether the patient had or had not received a cathartic. On the other hand, operation was performed in four acute cases, in one on the fourth day, two on the fifth day, and one on the seventh day, of illness. In all of these four cases a purgative had been withheld, and in none of them had the appendix perforated at the time of operation.

There are several reasons for the high mortality in children. The early symptoms are not so clear-cut and definite as in adults. The attack in children often follows a dietary indiscretion, and the parents naturally attribute the abdominal pain and nausea to an intestinal colic due to an overload of indigestible food. The violence of the symptoms is frequently not at all in proportion to the degree of appendical inflammation. We have had two patients walk into the hospital with their parents to be examined because they had a "pone" in the right lower abdomen. The "pone" in each case proved to be an appendical abscess. The progress of the inflammation is particularly rapid in children. The appendix usually lies high up in the abdomen, and there seems little effort on the part of nature to wall off the inflammatory process by the formation of adhesions, and perforation usually results in diffuse general peritonitis. Children as a rule are poor subjects for abdominal surgery; they withstand shock badly and hemorrhage worse. The child has much less blood than the adult, and the loss of a comparatively small volume in the young subject will often prove fatal.

Clopton[4] has recently reviewed the literature on appendicitis in children, and comes to the conclusion that this disease in infancy is rare. He reports three of his own cases in which the condition was caused by pinworms in the appendix. He calls attention to a point of tenderness in the loin a little lower down than that due to pyelitis. I think this is due to the fact that the appendix in children is often postcecal. Clopton also emphasizes the aid afforded by rectal palpation. We have found these two points to be of considerable value in diagnosis.

G. E. Baxter[5] has investigated the subject of appendicitis in infants under 2 years of age, and thinks that the incidence of this disease in infants is much more frequent than is usually believed. He reports one case in a child 18 months of age.

The symptoms of appendicitis in children are often rather atypical. Zesas[6] has reported an interesting series of cases in which the principal symptom was limping. The pain was referred to the right hip and groin. One case was even referred to the orthopedic clinic for treatment as a case of hip-joint disease. All of these patients were cured by removal of the appendix.

The principal conditions which may be confused with appendicitis are pneumonia, pyelitis, Pott's disease, typhoid fever and intestinal obstruction. Pneumonia gives a leukocytosis even higher than acute appendicitis, so the blood count is not a differential point. But a diagnosis of appendicitis in children should not be made without a careful examination of the chest. Rapid respiration, cough and flushed cheeks should suggest the chest as the more probable seat of trouble. Inflammation of the renal pelvis is a particularly confusing possibility when pus is found in the urine in a suspected case of appendicitis. On the one hand, we realize that pyelitis may exactly imitate the clinical syndrome of acute appendicitis. On the other hand, we know from abundant experience that pus, blood, albumin and casts may be found in the urine of a child suffering with appendicitis as the primary condition. If the child's illness is due to pyelitis alone the amount of pus is usually greater than when it complicates appendicitis. The point of greatest tenderness, rigidity, or a mass may be of aid. The rectal examination is often of particular value. There should be no confusion with Pott's disease if the doctors would make a habit of examining the spine. In typhoid fever, pain is preceded by at least two or three days of fever, headache and general malaise, whereas in appendicitis pain is the first symptom. Uncomplicated typhoid fever, too, will not have a leukocyte count of over 10,000. The question may remain doubtful between acute obstruction and acute appendicitis: a matter of little clinical importance, as both are unquestionably emergency surgical conditions, and their preoperative management is the same. An enema ought to clear up the possibility of any simple explanation of the stomach ache.

Early diagnosis and early operation seem to offer the best hope of reducing the mortality. If prompt operation is advised for adults it is much more important for children. Many surgeons advocate immediate operation on a child whenever a diagnosis of appendicitis is made, or whenever the case comes within the hands of the surgeon. There are many reasons for the endorsement of this as a sound surgical principle. Children are naturally restless, rebel against confinement to bed, and restraint, and generally take treatment badly. In addition to this, when food is withheld from a child, an acidosis soon develops, and this is often a troublesome complication. As a prophylaxis against this condition, we give all children glucose and soda, by bowel, after operation.

In our experience the administration of purgatives in the early treatment of appendicitis has done more harm than any other factor connected with this disease. I expect some of my friends among the older general practitioners will disagree with me on this point. They will argue that every case of stomach ache in children is not appendicitis, and that it is necessary to move the child's bowels as a therapeutic test to see whether or not the trouble is caused by some indigestible article of food. This point of view is practically correct, but I maintain that every advantage can be gained by the use of a soapsuds enema that can be expected from the use of castor oil, salts or calomel, without the danger of rupturing a gangrenous appendix, if the child should happen to have appendicitis. In justice to the general practitioner, I must say that in many cases, the parents have applied the above mentioned therapeutic test before the physician is called. For this reason it is necessary that we should have the cooperation of the layman before this danger can be eradicated. I would advocate that the state boards of health publish in the public health pamphlets which are distributed to the general public the advice to parents that, whenever a child is taken with abdominal pain, accompanied by nausea, vomiting or local tenderness, it should be put to bed, and nothing given it by mouth, until the family physician is consulted.

If the physician is doubtful about the condition, it would be well for him to secure surgical consultation, and if possible get a blood count as leukocytosis is the most constant symptom of acute appendicitis.

4. Clopton, M. B.: Jour. Missouri State Med. Assn., March, 1915.
5. Baxter, G. E.: Illinois Med. Jour., June, 1914.
6. Zesas, D. G.: Arch. gén. de chir., Paris, vii, 1409.

# SOME PRACTICAL ASPECTS OF SCHISTOSOMIASIS AS FOUND IN THE ORIENT

PRELIMINARY REPORT

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Recent investigations indicate the great prevalence of schistosomiasis in certain localities of the Orient. The free commercial intercourse with this part of the world suggests that not a few practitioners in the United States may eventually have patients who have at some time resided in the Orient, presenting some of the interesting and perplexing symptoms of schistosomiasis.

On joining the U. S. S. *Helena* at Ichang, China — about a thousand miles up the Yangtsze River — it was my experience to have fourteen peculiar cases at sick call that morning in which symptoms developed varying from acute bronchitis and urticarial dermatitis to dementia praecox associated with jacksonian epilepsy and hemiplegia. It was two weeks later, on arrival at Hankow, China, that continued laboratory examinations and further study of the literature convinced me that my cases with tentative diagnoses of cerebral syphilis, sunstroke, hepatic abscess, acute phthisis, etc., might have the same etiologic agent, namely, *Schistosoma japonica*. All cases occurred among forty-two men who had been on a three days' landing party to the gorges above Ichang, and had been in bathing in subsidiary streams.

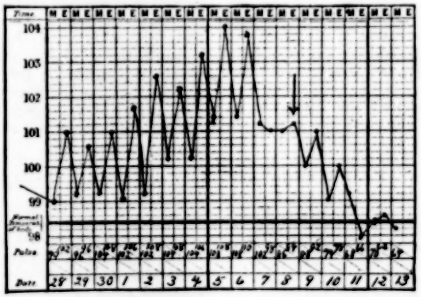


Chart 1.—Temperature chart, Case 4. Arrow points to administration of 0.6 gm. salvarsan.

## MODE OF INFECTION

Schistosomiasis in the Orient is caused by a blood fluke, a digenic trematode, inhabiting principally the blood vessels of the portal systems. The eggs are oval, yellowish-brown, similar in some respects to hookworm ova, and hatch out in a short time into ciliated larvae (miracidia).

It was first shown that a 1:1,000 solution of hydrochloric acid will kill the miracidia, which rendered injection by ingestion improbable. Many observers have failed to cause an infection by the application of miracidia to cutaneous surfaces, but Matsuura and Yamamota found ciliated larvae in the skin of animals infected by this parasite.

In view of the known life history of closely related parasites, an intermediate host was sought. Miyairi found the infective stage in an aquatic snail. Recently Leiper and Atkinson were able to follow the development of the ova from an infected dog through the liver of a snail (*Katayama nosophora*) to the recovery of an adult parasite in the blood vessels of laboratory bred mice exposed to infected water.

The entrance of the nonciliated young parasites (cercaria) is through the mucous membrane and possibly through the skin. Eight cases of external auditory infection were treated among the forty men returning from the landing party, but no relationship could be traced between the ear cases and those presenting the initial symptoms of schistosomiasis. It was noticed that there was a greater percentage of infection among the venereal cases. A large percentage of those infected usually give a history of exposure of body above the hips suggesting entrance through rectal or genito-urinary mucosa.

## SYMPTOMS

Symptoms are divisible in three stages, and this classification, combined with the protean manifestations, reminds one of syphilis.

*First Stage, or Stage of Invasion.*—This is the so-called urticarial or Yangtsze fever. In fourteen cases observed aboard this ship the patients gave a history of bathing in clear, still pools of the smaller streams above Ichang. The symptoms of urticaria, subcutaneous edema and elevated temperature appeared from twenty-four to seventy-two hours after exposure to the infected water. In eight out of ten cases there was diarrhea, and in seven this was accompanied by cramps; four of the eight were troubled with nausea and vomiting. There was pain and tenderness over the liver in one third of the patients, and half of them were troubled with cough, expectoration, and other symptoms of pulmonary affections. In one case the pulmonary symptoms were so well marked as to suggest incipient pneumonia. This was the only case presenting the evanescent areas of pulmonary dulness described by other writers. Eight out of the ten cases had elevated temperature varying from 100 to 104 F.; in 75 per cent. there were urticarial wheals and subcutaneous edema, varying from two or three per patient, to cases in which the face was so swollen that the features were scarcely recognizable.

From a perusal of the foregoing it would appear that only one, or all of the symptoms enumerated may be present in a patient suffering from the initial stage. It therefore seems possible that the symptoms of this stage may be absent or escape notice. It is quite possible that several patients suffering from minor symptoms were not seen by the medical officer.

*Second Stage.*—"In the second stage of the disease — that is, after the temperature comes down to nearly normal, and eggs begin to appear in the stool — symptoms may be divided into those of convalescence and those that go on to the third stage."[1]

This is the stage that is most important to bear in mind when treating former residents of the Orient. Whereas continual reinfections are apparently necessary for the production of the tertiary stage, it seems reasonable to suppose that a minor number of parasites may persist in the body, causing various subjec-

1. Laning, R. H.: U. S. Navy Med. Bull., January, 1914.

tive and objective symptoms, such as transient cough and expectoration, diarrhea and temporary abdominal pain and tenderness, hepatic disturbances, anemia, attacks of pyrexial conditions, etc. The pathology of the disease suggests that the second stage may persist for some time, and my experience with those who have apparently recovered from the first stage confirms this view. Unfortunately the diagnosis, in the second stage, is often obscure and difficult. The worms are not always in sufficient numbers for ova to be easily located, and eosinophilia may vary. One patient who had apparently recovered from the initial symptoms and was troubled only with lassitude and slight debility — called laziness by his companions — was taken as an example of the possibility of latent infection. Most of my leisure time was spent in searching for ova in his stools. Fully a hundred examinations were made before ova were found, and this stool contained as many as three ova to the slide.

The mental attitude of the schistosomiasis patient is striking. It varies from calmness and indifference to dulness and confusion. The patient never seems to worry about his physical condition. A case in one of the hospital corps, with hepatic symptoms, illustrates this indifferent attitude. This person appeared totally indifferent to all untoward signs and symptoms of his case, and even the suggestion of having to resort to operative measures failed to cause him to show any detectable signs of apprehension concerning his condition. When all symptoms had subsided within seventy-two hours after an injection of salvarsan, he was equally apathetic to the beneficial results. The patient with a daily temperature of 102 and 103 often wants to be up and about. A civilian friend of mine with an elevated evening temperature of six weeks' duration, with slight eosinophilia, presumably due to schistosomiasis, was able to carry on his work and play tennis each day. In fact, one of the hottest days of the year I played a five-set tennis match with him, although he had a temperature of 102 F.

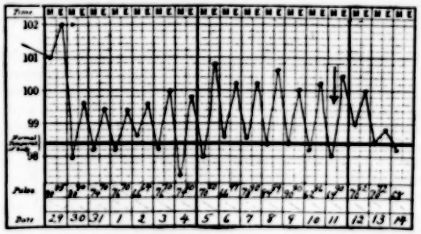


Chart 2.—Temperature chart, Case 5. Arrow points to administration of 0.6 gm. salvarsan.

*Third Stage.*—This stage is comparatively rare in foreigners. I have heard of but two cases, but there are probably many others. Briefly, this stage consists of hepatic and splenic hypertrophy followed later by a shrinking of the liver, cachexia, emaciation, ascites, and, finally, general anasarca. Dyspeptic symptoms are pronounced, associated with dysentery and diarrhea. It is often possible to make a snap diagnosis in certain cases of this stage by inspection alone, when passing through an infected locality. The large distended abdomen, emaciation, swollen ankles, etc., give a characteristic picture. Usually the patient in this case is a native farmer repeatedly reinfected by the dissemination of human excreta, which is extensively utilized for fertilization purposes in this part of the world.

## DIAGNOSIS

In the first stage, this is not difficult if accompanied by the characteristic urticarial rash and subcutaneous edema. In two cases with the only symptoms of simple continued fever, the diagnosis would probably have been overlooked had they occurred at any other time. The eosinophilia appears within from three to four weeks and is often well marked. The highest percentage in the fourteen cases was 27 per cent. of large granular eosinophils, but the number of finely granular cells with acidophilic affinities raised the percentage to 65 per cent. The ova begin to appear in the stools about a month after the beginning of the initial symptoms. They are found in bits of blood-streaked mucus on a hardened stool. It is well to give opium for a few days before in order to get constipated feces. In one stool an adult female schistosoma was found.

## REPORT OF CASES

CASE 1.—The officer in charge of the landing party had a mild case. Forty-eight hours after bathing, he noticed one urticarial wheal about 6 cm. in diameter just below the umbilicus, with two smaller ones on the lower extremities. No other symptoms were noted. This patient has been under observation for the past year, and frequent blood counts have shown no eosinophilia over 5 per cent. Repeated examinations of feces have been negative. For the past year this officer has been below normal in health, suffering from anemia, loss of weight, and minor gastro-intestinal disturbances. He is at present under treatment for these, which I believe—yet have not been able to demonstrate—to be due to a mild and obscure infection of *Schistosoma japonica.*

CASE 2.—The patient had the usual fever with the urticarial dermatitis of body and extremities and subcutaneous edema of face and forehead, so-called "bumps." Six weeks later he developed a large lumbar abscess, which was opened under a general anesthetic. Several eggs were found in the feces, and one adult schistosoma. He was transferred to the Naval Hospital, Canacao, Cavite, P. I.

## BENEFICIAL RESULTS OF SALVARSAN

There is little probability that a concomitant syphilitic infection was the cause of the beneficial effects of salvarsan in the following cases. The salvarsan was first administered in Case 7, before the diagnosis of schistosomiasis was determined, on the ground that perchance the symptoms were due to cerebral syphilis, although the past history was negative. Two of the cases subsequently gave repeatedly negative Wassermann reactions, and in no case were there any indications of a previous syphilitic disease.

CASE 4.—The patient was first admitted with temperature of 104 about forty-eight hours after swimming. No urticarial or subcutaneous edema was present. Fever lasted two weeks. The patient was readmitted one month later with a daily rise of temperature. Salvarsan was given, and the temperature returned to normal in three days. Eosinophilia was from 17 to 25 per cent. The eggs in this case were darker and more oval than usual, suggesting a different species (Chart 1).

CASE 5.—There was no history of any initial symptoms. The patient was transferred from another ship to the *Helena,* with a temporary diagnosis of hepatic abscess. Pain, tenderness, and muscular rigidity were present over the right hypochondrium, and the liver was enlarged. Eosinophilia was 12 per cent., with ova present in the stool. Salvarsan, 0.06 gm., was given intravenously. The temperature dropped

to normal and all other symptoms subsided within forty-eight hours (Chart 2).

Case 6.—An American civil engineer living in Ichang whose duty, in surveying the railroad of Ichang to Chungking, caused him to be exposed in infected regions, had had an evening temperature of from 100 to 102 for the past six weeks with anemia, lassitude and depression. The blood count showed slight increase of eosinophilia. One examination of the feces was negative. Salvarsan, 0.06 gm., was given intravenously, fever disappeared within twenty-four hours, and all other symptoms subsided. The patient when seen three weeks later had gained 10 pounds in weight.

Case 7.—The patient first reported, July 31, 1914, with numerous wheals over the body and extremities; the face and forehead were swollen with subcutaneous edema, temperature from 100 to 103 F. Aug. 4, 1914, the dermatitis had almost disappeared, and the patient was up and about. Aug. 6, 1914, the patient returned to bed; beginning hemiplegia was noted; the pupils were contracted and unequal, and the mental condition was confused. Aug. 8, 1914, paralysis of the right side was almost complete. Aug. 9, 1914, the temperature was subnormal, the condition was becoming progressively worse, the patient was in coma, pulse 140, respiration 45, and the case was reported to the commanding officer as apparently hopeless. Intravenous injection of salvarsan was recommended to be tried as a last resort, and 0.06 gm. was given intravenously. Twenty-four hours later the pulse, temperature and respiration were normal. The patient was able to understand questions, and could move the fingers of the paralyzed hand. From August 10 to 15, 1914, the condition was stationary; the patient was not oriented. He stated that he was on the U. S. S. *Buffalo*, but did not know whether he was in Mexico or the United States. He was unable to give the names of any of his shipmates. Aug. 15, 1914, second dose of 0.06 gm. of salvarsan was given intravenously. Aug. 16, 1914, improvement was marked; he was able to raise the affected hand to the head. He recognized the medical officer and was fairly well oriented. He was transferred this day from the U. S. S. *Helena* to the U. S. S. *Quiros* for further transfer to the Naval Hospital, Canacao, Cavite, P. I. Examination of feces was negative at the time of transfer.

The following are some notes from the health record after transfer. "U. S. S. *Quiros*, Aug. 20, 1914: Improving daily, fairly well oriented, able to raise right arm with effort." U. S. Naval Hospital, Canacao, P. I., Sept. 12 to Oct. 15, 1914: "Movement of right arm fairly well controlled, but with slight tremor of fingers and spastic rigidity of arm. . . . Blood pressure 120 plus. Wassermann negative." U. S. Naval Hospital, Mare Island, Calif., November 13 to December 20: "Only weakness of right arm and hand. . . . Although the blood tests are negative, he has shown remarkable improvement under antisyphilitic treatment." Restored to duty Dec. 20, 1914, having been on the sick list nearly five months.

A similar case of hemiplegia has been described by Tsunada and Shimamuda—cited by Laning—in which the patient suffered during life "from disorder of speech and tremors in both upper and lower extremities with headache and mental disturbances, later from vertigo and jacksonian fits (two or three a day), and finally from right hemiplegia." At the necropsy numerous ova were present in the brain substance.

### THE POSSIBLE RELATION OF SCHISTOSOMIASIS TO TROPICAL AND SUBTROPICAL NEURASTHENIA

If the view that a certain percentage of cases may have an unnoticeable primary stage followed by an obscure secondary stage is accepted, it would then appear that the difficult recognition and the prevalence of schistosomiasis may partially explain the deterioration of the white race in certain tropical and subtropical regions. This will perhaps serve to narrow that ill defined state known as tropical neurasthenia. At present, modern medicine reluctantly expends time and labor on the study of conditions, such as tropical neurasthenia, that are not susceptible to scientific interpretations of their causative factors. The medical scientists are willing to devote much study on some rare disease, with scientifically explained etiology, affecting an infinitesimal portion of the human race, whereas the obscure causes of the deterioration of the white race in the tropics has not, in my opinion, received full recognition of its importance. The laity seems to be more fully aware of its presence than the medical profession. In fact, some medical men almost deny the existence of tropical neurasthenia as a definite entity. If the most skeptical would spend a short time in conversing with from 10 to 20 per cent of the foreigners living in the Philippines and suffering from neurasthenia, I feel certain that it would convince him of the relative importance of this debilitating condition, which modern sanitation has only partially improved.

Therefore, it seems not improbable that a small percentage of the cases returned to the United States suffering from what is colloquially or jocularly expressed as "too long in China" and "Philippinitis," may be latent and obscure cases of schistosomiasis.

### SUMMARY AND CONCLUSION

1. Recent investigations are indicating the prevalence of schistosomiasis in the Orient and its economic importance to natives and foreigners.

2. The adult parasites may exist in the human body in insufficient numbers to permit satisfactory diagnosis by laboratory methods, yet are capable of causing untoward symptoms.

3. The result of salvarsan therapy, as symptomatic treatment in a limited number of cases, in the second stage, has been gratifying.

4. In view of the close relations existing between the United States and the Philippines and other countries where schistosomiasis is endemic, and the probable frequent latency of the disease, the matter is of importance to physicians in this country and especially to those practicing near the Pacific coast.

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**Overfed and Underfed.**—What are the characteristics of the overfed and the underfed? While there are probably exceptions to the rule, the two types may be expected to appear somewhat as follows: The first is heavy and of a high color. The man of this class is a deep sleeper, and dislikes to get up; he is an optimist, but not remarkably persevering. The sparingly fed individual is consistently opposed to the liberally nourished at every point. He is under weight, and often deficient in color; a light sleeper, if not actually troubled by insomnia; and sensitive to cold. As a worker he may be diligent and efficient, though the temperament exhibited is likely to be conscientious rather than enthusiastic. The high degree of endurance often noted in men and women who eat lightly affords the strongest argument in favor of such self-denial. It is probably to be explained by two circumstances. First, the intestine is to an exceptional degree free from injurious residues. Second, the blood and other body fluids are correspondingly free from avoidable by-products of metabolism. The resistance to fatigue secured is greatly to be coveted, but it is not unlikely that the cutting down of the food is often too rigorous. Depression of spirits is a common sign that the diet should be made more generous.—Stiles: "An Adequate Diet."

## THE INTESTINAL PARASITES OF TWENTY FOREIGN STUDENTS IN THE UNIVERSITY OF WISCONSIN *

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As this paper deals with aliens in the United States, the question naturally arises whether foreigners, especially those from the Orient, where parasites are so abundant, are a menace when entering this country. There is little doubt that the Chinese and Japanese who work the market gardens and do housework in California are dangerous to public health. An inspection in San Francisco in 1912[1] showed infections as follows: Of 1,484 Japanese admitted, 581 had *Ascaris lumbricoides;* 452 *Trichocephalus dispar,* and 451 hookworm. Of 1,002 Chinamen examined, 789 had Ascaris and 588 had Trichocephalus. These figures show that the percentage of infection was rather high. The foreigners examined were not of the most desirable class, the lower castes being largely represented. On the other hand, the subjects at the University of Wisconsin undoubtedly come from some of the best foreign families, as only those with considerable means would be able to come to the United States for a college course. It may be safely assumed, therefore, that the results obtained are conservative as compared with those from more ignorant or poorer classes.

The stools used for the present investigation were obtained from the Clinical Department of the University of Wisconsin, through the kindness of Dr. J. S. Evans and Dr. R. Drane. They were first examined macroscopically by spreading on a large piece of filter paper and picking apart with a dissecting needle for such things as proglottids, scolices, or living worms. Then each stool was well stirred, and a liberal sample taken by means of a spatula, and put in a smaller jar. The sample was then preserved by putting in a 10 per cent. dilution of liquor formaldehydi. A few drops of phenol (carbolic acid) were added also, as a further preservative. This method did away with a large part of the odor and preserved the eggs perfectly.

Of every stool at least six smears were made, the cover glasses used measuring 2.2 by 4 cm. These were examined under a microscope with a mechanical stage, a No. 8 ocular and a 16 mm. objective being used in searching for ova. A higher power, 4 mm. objective, was also used in identifying. The time taken to examine one of these smears was approximately twenty-five minutes, although in the case of a positive stool, a much greater time was often needed.

The feces of twenty male foreign students attending the University of Wisconsin were examined and ten (50 per cent.) gave positive results. The infections were as follows, the figures referring to the number of the patient: (1) Hookworm and *Trichocephalus dispar,* (2) *Hymenolepis nana;* (3) *Schistosoma japonica;* (4) *Ascaris lumbricoides;* (5, 6, 7, 8, 9, 10) *Trichocephalus dispar.* The infected individuals in several instances showed disorders connected with the presence of the parasites.

CASE 1.—Australian; Morong, Rizal, P. I. Age, 26 years; weight,[2] 108 pounds; height, 66 inches. Infected with book hookworm and *Trichocephalus dispar;* showed marked eosinophilia, also chloro-anemia. Had experienced much intestinal trouble, and complained of abdominal pains; was in very poor health.

CASE 2.—Chinese; Shanghai, China. Age, 21 years. Infected with *Hymenolepis nana;* gave no clinical evidence except for the presence of eggs in the feces.

CASE 3.—Chinese; Tai-an, China. Age, 28. Feces contained a few ova of *Schistosoma japonica;* had moderate chloro-anemia and suffered frequently from severe abdominal pains.

CASE 4.—Egyptian; Cairo, Egypt. Age, 30. Had a heavy infection of *Ascaris lumbricoides;* showed nothing abnormal, apparently in good health, weighing 175.2 pounds and measuring 61.8 inches in height.

CASES 5, 6, 7 and 8.—Appeared to be perfectly normal in spite of their infection with *Trichocephalus dispar.*

CASE 9.—Chinese; Wuchang, China. Age, 26; weight 106 pounds; height 60.9 inches. Had an infection of *Trichocephalus dispar;* troubled with eczema badly both on upper and lower limbs; also had marked chloro-anemia.

CASE 10.—Chinese; Chekiang, China. Age, 24; weight 83 pounds; height 51.1 inches. Severe infection with *Trichocephalus dispar;* troubled with much rectal bleeding; severe chloro-anemia, and showed general parasitic symptoms.

Thus the foregoing statistics indicate that 70 per cent. of the patients examined showed symptoms which parasitic worms might cause. Forty per cent. had severe cases of chloro-anemia, urticaria or eosinophilia. There is every reason to believe that in the absence of medical attention, it would have been only a short time until the parasites would have undermined the health of some of these persons, and some were certainly a danger to society.

It may be said in conclusion that the examinations described in this paper show that there is danger of infection from the average foreign student. Other people, doubtless, carry parasites at times, but the percentage of infection among foreigners, and particularly Orientals, is much higher. At any institution, therefore, which has a considerable number of such students, there is some danger unless care is exercised.

* From the Zoological Laboratories, University of Wisconsin.

1. Glover, M. W.: Hookworm Among Oriental Immigrants, THE JOURNAL A. M. A., June 15, 1912, p. 1837.

2. The weights quoted do not include clothing.

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## STUDIES OF THE SPINAL FLUID DURING IODID MEDICATION BY MOUTH *

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Examinations of the spinal fluid of persons under iodid medication were made to determine the presence of organic or inorganic compounds of iodin.

Study 1 includes observations on five patients in the University of California wards of the San Francisco Hospital, on routine iodid medication, and Study 2 observations on one person to whom very large doses of iodids were given. In each case examinations were made of two specimens of spinal fluid. At the first tapping as much fluid as possible was withdrawn, the second tapping being made some time later to ascertain whether or not the newly secreted fluid contained a greater amount of iodin, if any. Barbat[1] had reported that the withdrawal of spinal fluid while the blood stream was saturated with arsenic allowed a new fluid richer in arsenic to enter the cerebrospinal canal.

STUDY 1.—Iodin was tested for, by myself, in the following manner: A portion of spinal fluid was added to some

* The first of a series of studies on iodid medication in syphilis undertaken with Dr. Charles Tranter of San Francisco.

1. Barbat: California State Jour. Med., October, 1915.

dry sodium carbonate and the mass powdered; the latter was added slowly to a quietly fusing mixture of potassium nitrate and sodium carbonate; the entire mass was allowed to cool, was removed from the crucible and dissolved in distilled water; to a portion of the latter was added some starch paste, and then nitric acid containing a little nitrous acid, drop by drop. Controls containing minute traces of iodin gave a blue color, but no reaction occurred with any of the fluids examined.

FINDINGS IN STUDY 1

| Identification | Diagnosis | Iodid Medication | Spinal Fluid | |
|---|---|---|---|---|
| | | | First Tapping | Second Tapping |
| Ty., 12394 | Tabes | KI grs. XV t. i. d. for 3 mos. | Iodin negative | 48 hrs. later, iodin negative |
| Ab., 15167 | Transient hemiplegia; chronic nephritis | KI grs. XX t. i. d. for 17 days | Iodin negative | 76 hrs. later, iodin negative |
| De., 12893 | Tabes | KI grs. XV t. i. d. for 3 mos. | Iodin negative | 51 hrs. later, iodin negative |
| Pe., 14391 | ? | KI grs. XV t. i. d. for 1 mo. | Iodin negative | 10 da. later, iodin negative |
| Kn., 14248 | Cerebrospinal syphilis | KI grs. XXX t. i. d. for 11 weeks | Iodin negative | 21 hrs. later, iodin negative |

STUDY 2.—Here observations were made by Dr. Barbat and myself on a private patient, Bl., whose trouble was diagnosed as tabes. He was given potassium iodid by mouth in gradually increasing doses from 15 to 40 grains at the end of six days, and then 250 grains, by mouth, in a single dose. Tap 1 was made eighteen minutes later and Tap 2 after twenty-four hours. A week without medication followed, and then 240 grains of sodium iodid given, by mouth, in a single dose, and Tap 3 made thirty minutes later, 30 c.c. of fluid being withdrawn. No iodin was found in any of the specimens.

On Tap 1, I used the same test as in Study 1.

Tests of a portion of Tap 2 were made by T. Brailsford Robertson, professor of biochemistry in the University of California, and in the following manner: A portion of the fluid was evaporated to dryness and then fused with sodium hydroxid; the fused mass was taken up in a few cubic centimeters of water and acidified with hydrochloric acid; chlorin gas was passed through the fluid until the latter was a deep yellow in order to set free iodin from any iodids present; this fluid was then divided into two portions, A and B.

A was shaken with a drop or two of carbon bisulphid. No color appeared.

B was shaken up with chloroform, and the chloroform layer on separating was evaporated to dryness, the residue taken up in potassium iodid solution and tested with starch solution. No color was given. Iodin controls gave positive tests.

Another portion of Tap 2 was examined by Dr. Bennett of the Department of Physiology of the University of California. This portion was evaporated to dryness, fused with potassium carbonate and potassium nitrate, the residue taken up in water, starch paste added, and the solution electrolyzed with fine pointed platinum electrodes. A control containing 0.01 per cent. of iodin gave a blue point on one of the electrodes in a few seconds, but the specimen gave a negative result.

The test on Tap 3 was made by Dr. Barbat and myself by the electrolytic method, and no iodin was found.

### CONCLUSIONS

1. In the series of cases examined, regardless of the amount of iodin administered by mouth, no iodin or compounds of iodin were found in the spinal fluid.

2. Either iodin compounds do not pass the ependymal cells of the choroid plexus in any measurable quantity, or such iodin as does reach the spinal fluid is very rapidly fixed in the tissues.

209 Post Street.

## Therapeutics

### MOUTH INFECTIONS

Only recently has the part played by the mouth and its adjacent structures in the production of a great many pathologic processes been demonstrated. The mouth, including the teeth, gums and tonsils, affords a broad surface and readily accessible means of entry for various pathogenic micro-organisms. It is not always essential that visible evidence should be present in the mouth of the focus producing a systemic infection, to prove that the portal of entry was in the mouth. The focus may be discovered only by careful examination with the Roentgen ray. A portal of entry may be present and not directly demonstrable in any way, for example, when the bacteria enter the lymph or blood stream by way of the tonsils. That a focus does exist in the mouth and that it is directly responsible for the pathologic condition has been repeatedly proved by removing the source of infection or by treatment with a proper autogenous vaccine made from bacteria isolated from the pus at the site of the focus. Such treatment often causes the disappearance of the systemic pathologic condition.

Within the mouth there are various channels through which bacteria may enter the system: the tonsils, gums, roots of the teeth, and by way of the esophagus to the stomach and intestine. That the tonsils play an important part in various infections has been demonstrated by many. In a careful bacteriologic and pathologic study of the bacteria removed from the tonsils in various diseases, and injection of these bacteria into animals, Davis[1] was able to reproduce many of these conditions. He studied 113 hypertrophied tonsils from patients with endocarditis, nephritis, arthritis and simple tonsillar cases, isolating the organisms, most of which were streptococci, and injecting them into animals and producing a corresponding condition. The beneficial effects of tonsillectomy, he thinks, furnish the best evidence that the infected tonsils are concerned in the production of arthritic, cardiac, renal and other clinical conditions. Davis[2] again in 1913, in a study of forty-two cases of arthritides, could trace the condition to the diseased tonsils. Capps[3] summarized 1,400 cases of epidemic streptococcic sore throat, and mentions several complications, such as otitis media, erysipelas, arthritis, endocarditis and myocarditis. There were also pleurisy and pneumonia, while peritonitis that occurred resulted in many deaths.

In this connection, the work of Rosenow[4] proved that many ulcers of the stomach are associated with tonsillar infections. He obtained streptococci from some of these ulcers, and after injecting cultures of these organisms into animals, he was able to observe gastric ulcers in them. Stone[5] pointed out the relation between enlarged cervical glands and foci of infection in the tonsils, even though the tonsils may not be hypertrophied or inflamed. The short and direct communication between the tonsils and the lymphatics is responsible for this. In this way there may also result tuberculous adenitis.

1. Davis: Jour. Infect. Dis., 1912, x, 148.
2. Davis, D. J.: Chronic Streptococcus Arthritis, THE JOURNAL A. M. A., Sept. 6, 1913, p. 724.
3. Capps, J. A.: Epidemic Streptococcus Sore Throat—Its Symptoms, Origin and Transmission, THE JOURNAL A. M. A., Sept. 6, 1913, p. 723.
4. Rosenow, E. C.: The Production of Ulcer of the Stomach by Injection of Streptococci, THE JOURNAL A. M. A., Nov. 29, 1913, p. 1947.
5. Stone: Boston Med. and Surg. Jour., 1912, clxvii, 539.

That the mouth by way of the esophagus directly offers an entry for bacteria to reach the stomach is evident. The various bacteria are carried in from the dust that gets into the mouth, from the foods, and from infected places in the mouth, particularly the gums. Mayo[6] says that Smithies, in a "microscopic examination of gastric contents from 2,406 different individuals with 'stomach complaint' (dyspepsia, indigestion and the like), showed that irrespective of the degree of acidity of such gastric extracts, bacteria were present in 87 per cent.," and that while the proliferation of the pus-producing organisms, such as the streptococci and staphylococci, were retarded in the gastric juice, bacilli seemed to thrive.

Perhaps equally common as a source of infection are the teeth. The open, exposed, ulcerated or decayed tooth is not always the worst in this respect. More harm may be done by the heavily crowned, capped and bridged teeth, under the poorly fitted margins of which the bacteria flourish and manage either to enter the lymphatics or to send their toxins into the system. There may also be a tiny abscess situated deep down at the root of the tooth. In these cases local manifestations of a focus in the teeth may be entirely lacking, and may be demonstrable only by the Roentgen ray. These so-called "blind abscesses" may remain dormant a long time. Ultimately they open into the mouth by way of the sinus. Often they lead into larger abscesses in the bone, in which toxins are produced, giving rise to septic conditions. Haskin[7] believes that such abscesses, with their subsequent complications, are even more dangerous than the infections resulting from pyorrhea alveolaris. He describes a series of cases among which were complications such as gastric ulcer, anemia and neuritis. It is probable that, depending on the nature of the organism in the abscess, there may result any of the complications so often resulting from tonsillar affections. Rosenow[8] states that these foci are common in patients who for years have suffered from arthritis, neuritis, appendicitis, ulcer of the stomach, goiter, etc., and that persons with perfect health are, as a rule, free from sources of infection in relation to the teeth.

The treatment of the complications secondary to the focus within the mouth consists first of all in removing the mouth infection. Careful examination should be made of the tonsils and teeth, and if the tonsils are found to be hypertrophied or inflamed, even without visible signs of any abscess, they may be removed. Often the abscess may be located deep in one of the crypts. If any visible pus is present, it would be advisable to obtain a culture of the bacteria contained in it. Normal tonsils should not be removed. When the tonsils appear normal, even though there may be no history of tooth involvement, the teeth, nevertheless, should be carefully examined. Poorly fitting crowns should be taken off, and often underneath them may be found the cause of the trouble. Many cases of arthritis have been cured by a correction of the dental work of the mouth, removal or filling of ulcerated areas, and insertion of proper bridge work. Roentgenograms may locate a blind or apical abscess when least suspected. When such has been found, the tooth should be extracted. Often it is possible to drill into the abscess and in this way offer drainage for the pus. In this way also the tooth may be saved. This, however, can best be left to the judgment of the dentist.

Besides the removal of any foci, a mouth wash may be indicated. There are many mouth washes on the market under various trade names. Many of these contain the same ingredients and vary but slightly in their composition from those described in either the Pharmacopeia or the National Formulary. The best mouth washes are those that are alkaline, antiseptic and astringent. Some of the simpler antiseptic and astringent mouth washes are strong solutions of glycerin or of alcohol. Hydrogen peroxid, one part, to three parts of water is a good wash. For ordinary cleansing purposes sodium bicarbonate, in water, will serve the purpose.

Cleanliness of the teeth plays an important part in the asepsis of the mouth. By regular and frequent brushing of the teeth with a good, fairly stiff toothbrush and a simple tooth powder or tooth paste, the accumulation of tartar on and between the teeth may be to some extent prevented. In conjunction with this brushing of the teeth, gargling with a mouth wash will aid in cleaning the mouth. Equally if not more important in the care of the teeth is the periodic visit two or three times a year to a dentist, that tartar may be removed, that caries of the teeth may be early treated, and that the condition of the gums may be noted and pus pockets early discovered.

### PREVENTION

Prevention of suppuration or other infection in the mouth is of the greatest importance all through life. The following suggestions for preventive measures may be of value:

1. There should be inspection of children's teeth in schools.

2. Every infected area in the mouth must be treated and eradicated if possible as soon as discovered.

3. The public should be taught that a bad tooth or a diseased gum or tonsil is serious, and neglect of such a condition may cause an incurable disease.

4. The mouth of every patient should be examined as part of the physical examination.

5. Roentgenograms of suspected gums or jaws should be taken, and if advisable, a culture from the pus or secretions of the infected region should be made.

6. There should be cooperation of the physician with the dentist to decide on what is best for the correction of mouth defects, whether certain teeth should be filled or pulled, or otherwise treated, and just what is the best treatment for a diseased gum or tonsil. Neither physician nor dentist is infallible, and both should recognize that cooperation is best for the patient.

*(To be continued)*

6. Mayo, C. H.: Mouth Infection as a Source of Systemic Disease, THE JOURNAL A. M. A., Dec. 5, 1914, p. 2025.
7. Haskin: New York Med. Jour., May 16, 1914, p. 979.
8. Rosenow, E. C.: Mouth Infection as a Source of Systemic Disease, THE JOURNAL A. M. A., Dec. 5, 1914, p. 2026.

**The Obvious Treatment.**—An old story concerns a patient who, seeking free advice, met his physician one frosty morning and said: "Doctor, what do you do when you have a cold?" The physician craftily answered, "I cough." His answer is as obvious as the treatment for pruritus recommended by Dr. Andrew Borde, a physician who lived from 1500 to 1549. Dr. Borde admitted that itching of the skin was altogether beyond the power of his treatment. He says:

"This I do advertise every man for this matter (ailment) to ordeyne or prepare a good paire of nayles, to cracke (scratch) and clawe, and to rent and teare the skynne and the fleshe . . . and beware," he advises his patients, "reverberate not the cause inwards with no oynment," and "clawe not the skyn with fyshye fyngers, but washe the handes to bedwards" (at bed time).

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SATURDAY, NOVEMBER 4, 1916

## THE TREATMENT OF DIPHTHERIA CARRIERS

The recognition of human "carriers" of disease, who do not themselves manifest symptoms of the infection which they harbor, has brought new problems to be solved. To rid society directly of the carrier infringes perhaps on the personal liberty and happiness of an innocent individual. For the present, therefore, he must be subjected to such treatment as seems likely to subdue the organisms which he unwittingly distributes. Various proposals have been made for ridding diphtheria carriers of the offensive germs. The administration of diphtheria antitoxin has not proved successful. Local measures consisting of direct treatment of the areas of suspected invasion, notably in the nasopharyngeal passages, with sprays, gargles, inhalants and comparable devices, are at best doubtful in their effects. Antagonistic introduction of bacteria in the form of cultures of staphylococci, lactic acid bacilli and others has had its vogue. Insufflation with kaolin has also been championed[1] for the removal of bacteria from the mucous membranes.

A preliminary requisite for adequate treatment of persistent diphtheria carriers would seem to be the discovery of the precise location of the bacilli of the disease. The growing evidence of the involvement of the tonsils, the crypts of which furnish effective spots for the multiplication of the micro-organisms,[2] has found corroboration in recent researches.[3] The microscopic examinations of the tonsils or tonsillar crypts of carriers have pointed quite clearly to the presence of what are most probably diphtheria bacilli, in six out of seven cases examined. When there were lesions, as when the epithelium of the surface of the tonsil was necrotic, bacilli were found to multiply on the surface as well as in the crypts. These facts contribute further to the explanation of the disappearance of the bacilli and the failure to obtain positive cultures from the throat in many, though not all carriers, after tonsillectomy. By this operation an important focus of infection in which the micro-organisms have lodged and multiplied has doubtless often been removed. It must not be overlooked, however, that in further instances the bacteria have probably continued to grow in some place other than the tonsils or adenoids.

Attempts have also been made to increase the activity of the leukocytes in the pharyngeal and nasal secretions of diphtheria carriers. According to Tunnicliff,[4] the phagocytic power of their blood is increased, but at the same time the nose and throat may contain large numbers of leukocytes not engaged in phagocytosis, diphtheria bacilli being found outside of the leukocytes. Efforts to increase the activity of these leukocytes by the use of normal serum, leukocytic suspensions, and a variety of drugs (calcium chlorid, salicylate, lactic acid, magnesium chlorid) were unsuccessful, although these substances are found to promote phagocytosis in the laboratory.

1. Hektoen, L., and Rappaport, B.: The Use of Kaolin to Remove Bacteria from the Throat and Nose, The Journal A. M. A., June 12, 1915, p. 1985.

2. Friedberg, S. A.: Removal of Tonsils and Adenoids in Diphtheria Carriers, The Journal A. M. A., March 11, 1916, p. 810. Ruh, H. O.; Miller, M. J., and Perkins, R. G.: Studies on Diphtheria, II, The Treatment of Diphtheria Carriers by Tonsillectomy, ibid., March 25, 1916, p. 941. Albert, Henry: The Treatment of Diphtheria Carriers, ibid., Sept. 27, 1913, p. 1027.

3. Brown, Mary W.: Diphtheria Bacilli in Microscopical Sections of Tonsils from Diphtheria Carriers, Jour. Infect. Dis., 1916, xix, 565.

4. Tunnicliff, Ruth: Observations on Phagocytosis and Leukocytic Activity in Diphtheria Carriers, Jour. Infect. Dis., 1916, xix, 97.

## THE RIGHT AND WRONG OF MAKING EXPERIMENTS ON HUMAN BEINGS

To heal the sick and to prevent disease and death are the services to society to which the physician devotes himself. Just so far as he is capable of performing these functions, he is under obligation to perform them. But the ability of medical men to cure or check disease is often limited because the nature of the disease and suitable methods of treating it are still unknown. On every side the effect of increased knowledge in giving increased power is manifest. Greater knowledge is certain to yield greater ability to restore the sick to health. Again, just so far as the physician is capable of doing so, he is as much under obligation to secure further knowledge and to diffuse it as he is under obligation to apply his skill to the individual in distress. This duty of learning is the warrant everywhere for the painstaking labors of the medical investigator, whether he is in the laboratory experimenting on animals, or in the hospital thoroughly and critically studying his patients.

The duty of learning, the duty of making advances in diagnosis and treatment, is certain to involve the application of new methods or new medicaments. Fortunately, observations which can be made on animals offer reasonable assurance as to the safety of new procedures before they need to be tried on man. If a promising mode of diagnosis or treatment has been carefully worked out on lower animals, there appears to be no ethical objection to applying it to a human being who is in distress when it is reasonable to believe that its application would be beneficial. Devotion to the duty of learning, however, may tempt investigators

to make tests on their patients without due consideration, tests perhaps more likely to be valuable to others than to the person on whom they are made. Or procedures may have mixed values, in part beneficial to the patient, in part beneficial to his fellows. These situations raise an important ethical question: To what limit is the testing on human beings of a previously untried medical agency justifiable?

Just because an operation is a minor one and is very likely to be harmless, there is danger of assuming that the new knowledge to be obtained from testing it justifies the test, even without the consent of the person on whom it is to be tried. Such an assumption is a serious error. There is no more primitive and fundamental right which any individual possesses than that of controlling the uses to which his own body is put. Mankind has struggled for centuries for the recognition of this right. Civilized society is based on the recognition of it. The lay public is perfectly clear about it. Any hospital official or physician known to commit or to allow violation of the sacredness of the person becomes at once the object of hostility. And the law, as an expression of public conscience, declares that deliberate injury done to the body of another is an assault, and provides severe punishment for it. Society as now constituted will obviously not countenance any operation performed for the satisfaction of the operator or for the assurance of the investigator, whether or not for the immediate benefit of others, unless the consent of the person on whom the operation is to be performed has previously been obtained.

No doubt the justice of this ethical standard is generally recognized in the medical profession, and the spirit of the Hippocratic oath shows that from the earliest times this primary regard for the patient has been the core of the physician's honor. Occasionally, however, reports appear which indicate that investigators have made tests on human subjects which possibly may not have been intended directly for the benefit of the person concerned. In some instances it has not been clear that the consent of the subject was obtained. In other instances, in which dependents have been subjects, the superintendent of the hospital or asylum has been responsible for his charges, and it has not been clear whether he has given his consent or secured the sanction of relatives. It is clearly the duty of the physician to secure the consent of the patient or of the patient's guardian in case the patient himself is not capable of granting consent before performing any mutilating operation. The medical profession is certainly not called on, in any sense, to support the physician who transgresses the elementary principles of ethics.

Especially are the reputation and esteem of medical men endangered by any failure on their part to stand firmly for the fundamental right of the individual to respect for his own person. For the sick commit themselves to the care of the physician and surgeon helplessly and with implicit trust that their welfare alone will be considered. Any practitioner or investigator, no matter how laudable his motives, who fails in scrupulous regard for this trust is liable to do incalculable harm by rousing suspicions, fears and disrespect as to the character of medical service.

## THE HEMOSTATIC ACTION OF KEPHALIN

The importance of a better understanding of the nature of the coagulation of the blood is apparent to all who have to deal in a practical way with the control of hemorrhage. Howell of Johns Hopkins University contributed a significant item by the discovery that certain lipoids exert a thromboplastic action. The factor ordinarily lacking in fluid blood to make it clot promptly is available thrombin, which, in the presence of calcium salts, induces the production of the fibrin that forms the basis of the coagulum. The expression "available" thrombin has been used purposely in this connection because it is becoming apparent that the thrombin factor is ordinarily present in blood but is inhibited from its characteristic performance by some antagonistic substance (an antithrombin); or it may be that something is needed to "activate" the thrombin factor—to convert some antecedent substance into effective thrombin in the presence of which blood will clot promptly when the other essential conditions are attained.

Independent of any theoretical considerations as to the precise details of the coagulation process in blood, it has been established that contact with certain tissues, or addition of certain tissue extracts to blood plasma, leads to clot formation. In 1912 Howell[1] showed that the active substance concerned in this facilitation is presumably a phosphatid having the general properties of kephalin. Practical applications of this have already been reported. For example, Hirschfelder[2] of the University of Minnesota has described how an active thromboplastic preparation can be made from an ether extract of ox brain. The residue of such an extract or a weak emulsion of it in salt solution, when placed on an oozing surface of tissue, stops bleeding quickly and gives a very clean field for operation. Hemorrhages from bone, kidney, muscle and connective tissue, prostate and other glands are said to be easily controlled by this means. Hemorrhage from a cut artery obviously cannot be controlled so easily, because the force of the blood pressure pushes away the incipient clot as fast as it can be formed. In a pitted wound, however, such as occurs in warfare or when the femoral artery is cut through in Scarpa's triangle, and the pitted wound fills with blood,

1. Howell, W. H.: Am. Jour. Physiol., 1912, xxxi, 1.
2. Hirschfelder, A. D.: Brain Lipoid as a Hemostatic, Science, Aug. 18, 1916, p. 251; Brain Lipoid, New and Nonofficial Remedies, THE JOURNAL A. M. A., Aug. 5, 1916, p. 437.

application of the lipoid brain extract causes hemostasis spontaneously, because a thick enough layer of fibrin can be found.

With such evidences of possible usefulness in practical surgery, it has become doubly important to identify the facilitating agent. McLean[3] has therefore attempted to learn, in the physiologic laboratory of the Johns Hopkins University, whether the thromboplastic effects attributed to kephalin is a property of the substance itself, or the manifestation of some adherent impurity; and, further, whether it is shared by other related phosphatids in any degree. The evidence presented by him indicates that "impurities" will not account for the thromboplastic function. Not only brain kephalin, but also the comparable substance isolated from the heart and the liver exhibit the same reaction. Finally, the other phosphatids that have been described,[4] such as purified lecithin, cuorin, heparphosphatid and sphingomyelin, have no thromboplastic action. These facts give kephalin a unique physiologic significance.

## THE RELATION OF PROTEINS TO MILK PRODUCTION

The recent contributions to our knowledge of the chemical differences between proteins are beginning to manifest themselves in many ways in the study of nutrition. The researches of Osborne, Mendel and others in this country have centered attention on the indispensability of certain amino acids for the growth of new tissues. The value of proteins for the purposes of constructive metabolism is thus closely connected with the type and quantity of these essential amino acids which they yield. The failure of "incomplete" proteins like gelatin from animal sources or the zein of corn or the gliadin of wheat to promote satisfactory nutrition for growth is today readily explained, thanks to the pioneer researches of the past few years, on the basis of the lack of needed constructive nitrogenous units in such proteins. A reviewer has recently summarized the situation by stating that investigations of this type into the biochemical deportment of the protein cleavage products will undoubtedly lead ultimately to the assignment of more or less specific functions to the various amino acids, and hence will indirectly indicate the relative efficiency of this or that protein in bringing about a desired result in nutrition.[5]

In more than a superficial sense the function of the mammary gland resembles the phenomena of growth. It is concerned with the construction of new products of a very specific and unalterable character from such pabulum as is brought to the secreting structure by the circulation. The question arises, therefore, whether the gland is independent of the quality of the nitrogenous units thus furnished to it for the manufacture of milk; whether it can synthesize almost from the elements, as it were, the proteins characteristic of its secretion, or whether, like the rest of the body about to build up new tissue, the mammary structures are dependent on a qualitatively and quantitatively suitable supply of amino acids as constructive units.

Hart and Humphrey[6] of the University of Wisconsin have studied this problem in the case of the milk-producing cow. Their results indicate that the quality of the proteins is an important factor in maintenance and production, and that the synthetic powers of the mammary gland will not compensate for deficiencies in protein structure. In an earlier series of experiments, it was found that milk proteins had an efficiency for milk production and tissue restoration of about 60 per cent., in comparison with an efficiency of only 40 and 36 per cent., respectively, for the corn and wheat grain proteins. On certain otherwise comparable rations, for example, positive nitrogen balances were maintained with milk proteins for the production of as high as 35 pounds of milk a day, but negative balances resulted when the proteins were derived from the corn or wheat grain. Latterly, in comparison of the proteins of gluten feed, oil meal, distillers' grains, casein and skim milk powder for milk production, the relative efficiency of these protein concentrates ranged in essentially the order mentioned, the milk itself being the most effective source of milk protein.

These facts gained from the laboratories of animal nutrition are surely not without immediate significance for the human mammary functions. The new experimental observations bear out the value of the empirically accepted custom of supplying milk liberally in the diet of lactating women. So long as the other preferable protein sources in the human dietary are not specifically known, it becomes essential to make the protein supply in the food liberal enough to prevent any shortage of desired amino acid units of any sort whatever. This is the more important because such deficiencies do not always reveal themselves promptly in alterations of the supply of milk from an underfed or improperly nourished person. The forces of maternity in maintaining milk production at a high level for a long time prevent any failure of milk supply even where it might be expected; for when the food does not furnish what is requisite, the individual derives the necessary constructive units from its own tissues. Improper food during a period of lactation may thus bring about emaciation or partial depletion of muscular tissue without a symptom of the lack being revealed by any impoverishment of the milk flow for some time. Hence any consideration of the efficiency of proteins from different sources for milk

3. McLean, J.: The Thromboplastic Action of Cephalin, Am. Jour. Physiol., 1916, xli, 250.

4. The Lecithins of Milk, editorial, THE JOURNAL A. M. A., Nov. 13, 1915, p. 1734; Pure Lecithin, April 1, 1916, p. 1029.

5. Underhill, F. P.: The Physiology of the Amino Acids, New Haven, Yale University Press, 1916, p. 158.

6. Hart, E. B., and Humphrey, G. C.: The Relation of the Quality of Proteins to Milk Production, Jour. Biol. Chem., 1915, xxi, 239; Further Studies of the Relation of the Quality of Proteins to Milk Production, ibid., 1916, xxvi, 457.

production must take into account not only the protein secreted in the milk but also that stored or destroyed in the rest of the organism; for milk production at the permanent expense of catabolizing tissues is far from an ideal situation.

## RHUS POISONING

The discussion of the etiology and mechanism of poisoning through the agency of the poison oak (*Rhus diversiloba* T. and G.) and its near relatives, poison ivy (*Rhus toxicodendron* L.), and Japanese poisonous sumac (*Rhus vernix* L.), in recent issues of THE JOURNAL,[1] seems to indicate an especial interest in this subject. It becomes apparent that some believers in the toxicity of these plants postulate the poison to be of a gaseous nature, so that it can easily be transmitted without contact with parts of the plant. Some assert the probability of a bacterial nature of the poison in order to explain the often subtle and otherwise apparently inexplicable spread of the signs of affection with rhus intoxication. Others maintain that contact is necessary and that the toxic agent is unquestionably a chemical substance of defined properties.

A series of experiments, recently reported by McNair[2] from the Rudolph Spreckels Physiologic Laboratory of the University of California, establishes a number of facts concerning the active principles of poison oak. McNair, to whom we already owe chemical studies previously referred to on the nature of oak poison,[3] has tried some crucial experiments to determine or exclude certain of the possibilities of transmission of rhus poisoning still in doubt. These points were already known for poison ivy and poison sumac. The nonbacteriologic nature of the toxic substance, its nonvolatility, its resinous nature, its absence in the pollen and plant hairs, and its chemical properties were determined by the methods previously employed by other investigators in their studies of the poisonous constituents of the related plants. In fact, the results indicate that the toxic agents in the several plants are identical or very closely related.

The oft repeated assertion that poisoning may result from exposure to smoke from burning stems is experimentally verified. Smoke from the heated leaves causes dermatitis if blown on the wrist. If, however, the smoke is filtered through glass wool, it will no longer produce toxic effects, showing that smoke is only a mechanical carrier of the poison.

The part of the plant to be feared is the resinous sap. This sticky sap, exuding from all parts of an injured plant, comes into contact with hands or other exposed portions of the body, and may even be carried indirectly on clothing, tools, insects, smoke, etc., to the skin of persons far from the actual neighborhood of the plant, giving rise to those mysterious "recurrent" cases of oak poisoning. Sap thus carried loses its toxic properties by oxidation, the rate of loss being most rapid when the temperature is blood heat and the atmosphere humid. The irritant in the sticky resinous sap slowly diffuses through sudoriparous and sebaceous ducts, hair follicles, and through the skin itself where it is thin and delicate.

A suggestion has been advanced that possibly insects carry poison from plant to person. This McNair believes cannot, from present evidence, be denied; but it is doubtful whether severe cases of rhus dermatitis can be caused by the small amount of rhus poison that an insect might carry.

The principal lesions of dermatitis venenata from poison oak have been described by White.[4] McNair adds to the symptoms already recorded an accompanying leukocytosis (in severe cases blood counts frequently giving more than 12,000 leukocytes to the cubic millimeter), and constitutional disturbances, such as fever, coated tongue, loss of appetite, constipation, and a trace of albumin in the urine (he records one case in which an acute nephritis developed). As diagnosis is occasionally difficult, certain peculiarities may be noted, distinguishing it from eczema and herpes: Oak poisoning frequently begins between the fingers, and is markedly acute in character, with swelling and often large vesicles and blebs, the exudate from which is nontoxic. It occurs in sharply defined patches, elongated streaks, and other irregular shapes corresponding with the original area of contact. It does not follow the nerve trunks. It seldom attacks the scalp or the inside of the hands. The areas of the skin to which the poison has been conveyed from the original site of contact are usually less affected. It may subside in from four to six days, depending on the amount of the irritant and the sensitiveness of the skin.

1. The Poisonous Principle of Poison Oak, editorial, THE JOURNAL A. M. A., Aug. 5, 1916, p. 441; Poison Oak and Poison Ivy, Queries and Minor Notes, Sept. 2, 1916, p. 763; Etiology of Rhus Poisoning, Queries and Minor Notes, Oct. 4, 1916, p. 1175.
2. McNair, J. B.: The Transmission of Rhus Poison from Plant to Person, Jour. Infect. Dis., 1916, xix, 429; The Pathology of Dermatitis Venenata from Rhus Diversiloba, ibid., 1916, xix, 419.
3. McNair, J. B.: Jour. Am. Chem. Soc., 1916, xxxviii, 1417.
4. White: Dermatitis Venenata, 1887.

**Paraffin as a Petrol Substitute.**—In view of the abnormally high price of petrol (gasoline) in England and the difficulty of obtaining it, an article in *Engineer*, 122, No. 3158, describes a specially constructed vaporizer and carbureter, by the use of which paraffin may be substituted for petrol in motor-driven vehicles. A small tank is fitted for the supply of petrol for starting the engine, and paraffin is used after the vaporizer has become sufficiently hot. The carbureter has two float chambers, one for petrol and the other for paraffin, and has a main jet and two pilot jets. The sprayed paraffin enters the vaporizer, which consists of two concentric tubes, between which the exhaust gases from the engine pass and thus heat the walls of the inner tube. The latter tube contains a worm which causes the mixed air and paraffin to whirl as the mixture traverses the inner tube. There is thus a tendency to throw an unvaporized paraffin into contact with the hot walls, where vaporization is completed.

# Current Comment

## THE TOXICITY OF THE PIGMENT OF CERTAIN FOODS

The controversy over the bleaching of flour[1] with chlorin has many issues, but on one point all agree, namely, that the transformation of the dark coloring matter from the wheat to a "pure" white does appeal to the esthetic sense. Casting aside for the moment the problem of its effect on health, it cannot be denied that it allows a poorer grade of flour to be placed on the market at a fancy price, since the public is thus prevented from estimating the value by the color. The character of the pigment of the flour has been shown to be identical with the coloring substance of the carrot, which had previously been isolated and given the name "carotin" or, as Monier-Williams[2] has more recently termed it, "carrotene." The relative amount of carotin in flour is much smaller than in carrots. Wells and Hedenburg[3] of the University of Chicago have been conducting an investigation on the effects of chlorin on flour, and in this connection undertook to determine the possible toxicity of the pure pigment matter, both bleached and unbleached, but using carrot as the source of supply of the carotin. The purified pigment, in olive oil, was injected intraperitoneally into guinea-pigs (weighing about 250 gm. each) in an amount of 0.2 gm.; this is equivalent to the amount of carotin in 200 kg. of flour. In addition, intradermic tests, such as used by Corper for the study of local toxicity, were made. The authors concluded that "even in relatively very large doses carotin, whether in its natural state or saturated with chlorin, is almost entirely devoid of toxicity." Since carotin is distributed throughout all animal bodies, derived in the main from food, these experiments would seem to indicate that no deleterious effects would arise from any such quantities as could accumulate in the tissues.

## SCIENCE NOTE

Last week a Sporting Note appeared in this department relative to the alleged secret of Ty Cobb's baseball success — "Nuxated Iron."[4] Those of our readers into whose hands some not-too-particular newspapers may happen to fall are, doubtless, familiar with at least some of the claims made for the latest "patent medicine" sky-rocket, "Nuxated Iron." It was "Nuxated Iron" that "gave Ty Cobb such tremendous strength and vitality after he was so weakened and all run down." Mr. Jess Willard says: "Take Nuxated Iron if you want plenty of 'stay-there' strength and endurance and health and muscles like mine." Dr. Ferdinand King, according to the "Nuxated Iron" advertisements, prescribes this latest wonder. Dr. King, we are told, is a "well-known New York physician and author." He should be well known from the picture that appeared in his double-column advertisements in which, in "forty-eight point" black type, he appealed to the masculine sinners of New York: "I Guarantee To Cure the Following Male Diseases." Further continuing our scientific investigation of the literature, we learn from the *Police Gazette* and similar authorities that "Nuxated Iron" puts the "Most Astonishing Youthful Power Into the Veins of Men" and is in fact "A Wonderful Discovery which Promises to Mark a New Era in Medical Science." For fear that some of THE JOURNAL readers may not take this bibliography with sufficient seriousness, we hasten to call attention to the full-page advertisements of "Nuxated Iron" that have been running in the New York *Medical Record*. Here we learn that the preparation "as a tissue builder and tonic is well worth the careful investigation of every physician who wants results." To save our readers the trouble of further search: Up to the time of going to press, the New York *Medical Record* has had no editorial on this latest therapeutic marvel.

## THE REGULATION OF BLOOD VOLUME

Dilution of the blood is usually followed by diuresis as one of the factors in securing a return of the organism to its normal condition. Because of the rapidity of the regulatory response it is not easy, even with the exclusion of the kidney cooperation, to maintain an excessive blood volume for any length of time. Some of the problems here concerned were recently discussed in THE JOURNAL.[1] Several years ago, Fischer and Hogan[2] called attention to the fact that intravenous injections of gelatin solutions are not diuretic and that, therefore, high arterial pressure is likely to be maintained for a longer time after such injections than after introduction of ordinary saline solutions. It was consequently suggested that gelatin-containing solutions might advantageously replace ordinary saline solutions for injection in cases of shock in which it might be desirable to keep the blood pressure high for a considerable period of time.[3] The hypothesis on which this suggestion was based concerns the hydrophilic or water-retaining capacity of colloids, such as gelatin. It is conceivable that, even if no diuresis occurs, the volume of the blood may be altered, after injection of saline-colloid solutions, by the disappearance of fluid into the tissue reservoir, as commonly happens when simple saline fluids enter the circulation.[4] An investigation of this question by Bogert, Underhill and Mendel[4] at Yale University shows, however, that though fluid injected in the form of colloidal solutions containing gelatin

1. Chlorin Bleached Flour, editorial, THE JOURNAL A. M. A., Nov. 28, 1914, p. 1959; Modern Bread and Deficiency Diseases, Current Comment, April 22, 1916, p. 1314.
2. Monier-Williams, G. W.: Reports of the Local Government Board (Great Britain), Public Health and Medical Subjects Series, No. 73, 1912.
3. Wells, H. G., and Hedenburg, O. T.: The Toxicity of Carotin, Jour. Biol. Chem., 1916, xxvii, 213.
4. See the exposé of this "patent medicine" in the Propaganda department of THE JOURNAL, Oct. 21, 1916.

1. Remote Effects of Nephritis, editorial, THE JOURNAL A. M. A., Oct. 14, 1916, p. 1164.
2. Fischer, M. H., and Hogan, J. J.: Kolloidchemische Beihefte, 1912, iii, 385.
3. Hogan, J. J.: The Intravenous Use of Colloidal (Gelatin) Solutions in Shock, THE JOURNAL A. M. A., Feb. 27, 1915, p. 721.
4. Bogert, L. Jean; Underhill, F. P., and Mendel, L. B.: The Action of Saline-Colloid Solutions upon the Regulation of Blood Volume: Studies of the Permeability of Cellular Membranes, II, Am. Jour. Physiol., 1916, xli, 219. Roger and Garnier: Arch. de méd. expér., 1913, xxv, 273. Boycott, A. E.: Jour. Path. and Bacteriol., 1914, xviii, 498.

may leave the circulation as readily as that in non-colloidal solution, the restoration of the blood volume to normal is as a rule not so prompt after the use of the colloidal solutions. The regulation is less efficient. There are, however, drawbacks to the introduction of foreign protein into the blood, so that further investigation of the proposed procedure in man seems to be called for before it is adopted as a routine in practice. In this connection it may be of some interest to consider the effect on the regulation of blood volume produced by injections of alkaline solutions. These have been proposed by Fischer[5] as a means of dehydrating the colloids of the body. Bogert, Underhill and Mendel[6] have demonstrated that the addition of alkali, up to 0.4 per cent. of sodium carbonate, to injected salt solutions has no apparent effect on the regulation of blood volume either in normal or in nephritic animals. The rate at which, and the extent to which, injected fluid leaves the blood vessels is unaffected by the addition of the alkali.

## THE AUTOMOBILE AS A CAUSE OF POLIOMYELITIS

The newspapers have given an unusual amount of space to the recent epidemic of poliomyelitis, which is remarkable in view of the small number of cases of this disease as compared with epidemics of such diseases as scarlet fever, diphtheria and other exanthems. An explanation is to be found in the insidious nature of the disease and its serious after-effects, in addition to the high mortality. Naturally there has been a large crop of sensational statements as to its causation and treatment. Not the least remarkable is one which has gone the rounds of the press during the past week. This paragraph reports a statement to the effect that the epidemicity of poliomyelitis is due to the fumes produced by automobiles. As the announcement is alleged to have been made before the American Public Health Association, public opinion may possibly attach undue importance to it under the impression that it is endorsed by that association. Of course to maintain such a theory it would be necessary to show that epidemics of poliomyelitis did not occur before the development of automobiles, and that they do not occur now in places in which there is little or no such development. Since 1841, when the first epidemic of this disease was reported, though not recognized, in Louisiana, until the present day, a number of these outbreaks have occurred. It will be necessary to mention only some which are inconsistent with the theory advanced in the statement referred to. Such are an epidemic of forty-three cases in 1877 at Stockholm; an epidemic of from 150 to 160 cases in the summer of 1894, in Otter Creek Valley, Vt., and an outbreak in 1899 in Norway. All of these occurred before the development of the automobile industry. In 1905 and 1906, epidemics occurred in Norway with a total of 1,053 cases, especially prevalent in the northern part of Norway. No one will allege that the northern parts of Norway even now, ten years later, are places where poliomyelitis could, by any twist of the imagination, be attributed to "gases and fumes given off in the atmosphere by the combustion of oils and fluids used in automobiles." *Post hoc, ergo propter hoc* is a familiar fallacy; *ante hoc sed propter hoc* is as novel as it is startling.

5. Fischer, M. H.: Oedema and Nephritis, Ed. 2, New York, 1915.
6. Bogert, L. Jean; Underhill, F. P., and Mendel, L. B.: The Influence of Alkaline-Saline Solutions upon Regulation of Blood Volume: Studies of the Permeability of Cellular Membranes, III, Am. Jour. Physiol., 1915, xli, 229.

## MEDICAL LICENSURE IN THE UNITED STATES

During the last fifteen or twenty years, medical practice laws in nearly all states have been improved. Considering the country as a whole, however, more confusion and inefficiency still exist in connection with medical licensure in the United States than obtain in any other civilized nation. Instead of its being a function of the national government, as in other countries, the protection of the public against incompetent and ignorant practitioners of medicine has been left to each individual state. And, as a rule, state governments have not appreciated or assumed the responsibility, and have failed to establish a control of medical licensure comparable with that in other countries. Either adequate medical practice laws have not been enacted, or competent boards have not been provided to enforce them. At the present time, there are six states[1] in which the laws do not give the licensing boards authority to establish standards of preliminary education, or the boards have taken no action, and in fifteen states[2] the laws do not empower the boards to refuse recognition to seriously low grade medical colleges, or the boards have failed to make use of that authority. Still greater confusion exists in each of twenty states[3] in which the responsibility for licensing those who are to treat the sick has been divided between from two to five separate and independent boards which, of course, makes impossible a high degree of efficiency. Even in states in which there are single boards, however, there remains much room for improvement. Only a beginning has been made in the use of practical and clinical tests, and in most states the examinations — written questions and answers — do not test a candidate's real knowledge and ability, but rather encourage quiz-cramming methods of education. A satisfactory regulation of the practice of medicine in each state requires (*a*) that there be a single board of medical examiners, the members of which are qualified for the duties devolving on them; (*b*) that the authority to license those who assume the responsibility of caring for the sick shall rest absolutely in this board; (*c*) that this board establish a minimum standard of educational qualifications, in accordance with which every candidate for a license be tested by written, laboratory and clinical examinations. With such provision in each state, the highest efficiency, taking the country as a whole, requires a

1. These states are Florida, District of Columbia, Idaho, Massachusetts, South Carolina and Wyoming.
2. These states are Arizona, California, District of Columbia, Idaho, Kansas, Massachusetts, Montana, Nebraska, Nevada, Oregon, Tennessee, Texas, Utah, Washington and Wyoming.
3. These states and the number of separate boards in each, are as follows: Arkansas, 5; Connecticut, 4; Florida, 4; Georgia, 2; Idaho, 2; Kansas, 2; Louisiana, 3; Maryland, 2; Michigan, 2; Minnesota, 2; Missouri, 2; Montana, 2; Nebraska, 2; New Mexico, 2; North Carolina, 2; North Dakota, 3; Pennsylvania, 2; Rhode Island, 2; South Dakota, 2, and Vermont, 2.

close cooperation among state boards through which uniformity of requirements and equally effective methods of examination may be established. When these principles have been put into effect, the people of the United States may be assured that those who assume the rôle of the physician will be as well trained and as skilled as the average of those in other countries.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ILLINOIS

**Sanatorium Opened.**—The formal opening of the Rock Island Municipal Tuberculosis Sanatorium took place October 19.

**Health Conference.**—Arrangements are being made by Dr. C. St. Clair Drake, secretary of the state board of health, Springfield, for five district health conferences to be held in the state during the winter.

**County Sanatorium.**—Miss Grace Osburn, Chicago, state worker for a tuberculosis sanatorium, is touring Ogle County urging the voters to maintain a sanatorium in and for the county. This is the third county in the state to vote on this question.

**School Vaccination Sustained.**—The Illinois Supreme Court, on October 25, after considering the case of Wendell against the city of Peoria, rendered a decision upholding the right of the school board to bar from school children who have not been vaccinated.

**Personal.**—A farewell dinner was given by physicians of Peoria and vicinity to Dr. Elbert W. Oliver, October 20. Dr. Oliver left October 23 for his new home in Sheridan, Colo. ——Dr. John J. Hanmore, Urban, coroner of Champaign County, who sustained severe injuries when his automobile struck a telephone pole near Gifford, October 16, is still under treatment at the Julia F. Burnham Hospital, Champaign, and is said to be improving.

#### Chicago

**To Name Hospital for Dr. Cotton.**—The health commissioner has suggested that the Contagious Diseases Hospital be named after the late Dr. A. C. Cotton and has written a letter to Mayor Thompson, asking his approval of the plan.

**Chinese Doctor to Lecture in Chicago.**—Dr. Yamei Kin, for the last ten years the active head of the Pei Yang Woman's Hospital, Tien Tsin, China, has arrived in Chicago and is visiting the family of Dr. E. C. Dudley. Dr. Kin has been on a lecture tour through the East and will also be heard in Chicago.

**Typhoid Fever in Englewood School.**—After an exhaustive investigation Dr. Herman L. Bundesen of the city health department announced, October 24, that fifteen cases of typhoid among students of the Englewood High School were due to salad containing typhoid bacteria. There have been no further cases of typhoid in the school.

**Personal.**—Dr. Channing W. Barrett was elected president of the Chicago Gynecological Society at its thirty-eighth annual meeting.——Maj. Gustavus M. Blech, commanding Field Hospital, No. 2, Ill. N. G.; Capt. Frederick O. Fredricksen of Field Hospital, No. 1, and Lieut. Ray H. Davies, Field Hospital, No. 2, have been in Chicago on leave of absence.

**Hospital Raises Fund.**—The desired sum of $150,000 for the Norwegian Lutheran Deaconess Home and Hospital, to be erected at 1138 North Leavitt Street, was assured at a final rally held at the Hotel La Salle, September 24, when it was announced that $125,000 had been secured of which $100,000 was in cash and that two citizens of Chicago had guaranteed the remainder.

**Field Hospital Mustered Out.**—Field Hospital Company, No. 1, commanded by Maj. William J. Swift, was mustered out of the service of the United States, at Springfield, October 26.——Field Hospital, No. 2, is still in Springfield, awaiting muster out, which probably will be completed this week. This company arrived in Springfield, October 20, from the Mexican border.

**Fenger Memorial Tablet Unveiled.**—A copper, hand hammered memorial tablet, in honor of Dr. Christian Fenger, was unveiled at the Cook County Hospital, November 3. The presentation address was made by W. A. Bauer, president of the Dr. Fenger Memorial Fund. The tablet was accepted on behalf of the hospital by the president of the Board of Commissioners of Cook County, and an address was delivered by Dr. Augustus A. O'Neill, president of the Chicago Medical Society, on "The Life and Work of Dr. Fenger."

**Lectures at Children's Memorial Hospital.**—The auxiliary board of the Children's Memorial Hospital announces a series of lectures, to be given by members of the staff of the hospital. The following lectures have been announced: November 1, "Progress in Medical Care and Treatment of Infants," Henry F. Helmholz; November 8, "Some Medical Problems in the Hospital Care of Children," Samuel J. Walker; November 15, "Nature and Management of Contagion," Frank S. Churchill; November 22, "Surgery of Infants and Young Children," Coleman G. Buford; November 29, "Orthopedic Conditions in Children," Edwin W. Ryerson; December 6, "Nursing Methods as Applied to Children," Miss Elsie L. Burks, R. N. The lectures will be given in the lecture room in the Agnes Wilson Building, 735 Fullerton Avenue, on Wednesday morning at 11 o'clock.

**Cook County Survey of Mental Defectives.**—Dr. Herman M. Adler, until recently chief of staff of the Boston Psychopathic Hospital, has resigned that position, and has taken leave of absence for one year from his duties as assistant professor of psychiatry in Harvard University. At the request of the City Club of Chicago and of the Illinois Society of Mental Hygiene, he is conducting an investigation of the methods of dealing with insane, feebleminded and psychopathic delinquents in Cook County. This work is being undertaken under the auspices of the National Committee for Mental Hygiene and the Rockefeller Foundation, and is a part of the much more extensive survey of mental defectives which is being conducted throughout the country. The immediate object of the survey is to determine the facilities for dealing with mental deficiency and delinquency. The result of this survey must depend on the interest taken in it by the local authorities. Special committees on registration, research, publicity, lectures and affiliation, it is expected, will aid the general committee in its work.

### INDIANA

**Typhoid in Indianapolis.**—During September, the state board of health reports that there were 185 cases of typhoid fever in Indianapolis, the largest number of cases ever reported in the history of the health department.

**Hospital Wing Opened.**—The new wing of the Methodist Episcopal Hospital, Indianapolis, was officially opened, October 12. It is a five-story structure with a roof garden, is devoted entirely to private patients, and can accommodate sixty-five patients.

**New Field Hospital Company Organized.**—Field Hospital Company, No. 2, Ind. N. G., which had recruited at Frankfort, has been mobilized at Fort Benjamin Harrison, and the following officers have been appointed: Maj. Archibald G. Chittick, Frankfort, and Lieuts. Martin L. Oilar, Russiaville; Ellis Trent Stout, Upland; George D. Haworth, Noblesville, and C. Herbert Bruner, Greenfield.

**Personal.**—Dr. Frederick A. Douglas, Richmond, has gone to Camp Borden, Toronto, Ont., to enter the Canadian Army Medical Service.——Dr. Robert C. Light, Indianapolis, while working over his automobile, injured his left eye so that it had to be enucleated.——Dr. Jefferson R. Hildrup, Windfall, has been appointed a member of the staff of the State Epileptic Village, Newcastle.——Dr. Floyd A. Loop has resigned as medical superintendent of the Wabash Valley Sanitarium, La Fayette.——Dr. James H. F. Prentiss, Gary, is reported to have retired from active practice and will make his home in Eustis, Fla.——Dr. James M. Dinnen, Fort Wayne, has been appointed chief surgeon of the Nickle Plate System.

### IOWA

**Southeastern Physicians Hold Meeting.**—At the annual meeting of the Southeastern Iowa Medical Society, held at

Muscatine, October 19, Fairfield was selected as the place of meeting for next year and the following officers were elected: president, Dr. Campbell P. Howard, Iowa City; vice president, Dr. Elbridge H. King, Muscatine; secretary-treasurer, Dr. Charles F. Wahrer, Fort Madison.

**Hospital Notes.**—The Fraternity and Charity Society of Dubuque has inaugurated a campaign for the erection of a hospital for the treatment of persons afflicted with tuberculosis. It is proposed to erect a building to cost $75,000. The proposition will be submitted to voters at the November election.——The furnishing of the New Mary Greeley Memorial Hospital, Ames, is being carried on rapidly and it is expected the hospital will be in operation early next month.

**Personal.**—Dr. Alden R. Hoover, after ten years' work in Asiatic Turkey, where he was in charge of a hospital of the American Board of Commissioners for Foreign Missions and later in charge of the American Red Cross work in Constantinople during the Dardanelles campaign, has returned to America and has located in Des Moines, where he will devote himself especially to surgery.——Dr. Harley L. Sayler, city health officer of Des Moines, has gone to Wyoming on a leave of absence.——Dr. Henry Matthey, Davenport, has returned to America after two years' service with the German army.

## MARYLAND

**Dinner for Dr. J. P. Wade.**—The friends and associates of Dr. J. Percy Wade commemorated the twenty-fifth anniversary of his services at the Spring Grove State Hospital by tendering him a dinner at the Baltimore Club on the evening of October 26. Dr. Wade was appointed assistant physician at the hospital on Oct. 26, 1891, and became superintendent, April 15, 1896.

**Personal.**—Dr. G. Milton Linthicum, captain in the Medical Corps of the Fifth Regiment, is at home on a thirty-day furlough. While on the border he has been connected with the new Eagle Pass Hospital.——Dr. Thomas B. McDonald, Cumberland, is in a critical condition from a general breakdown brought on by ill health and the shock he recently suffered when his little daughter died from infantile paralysis and his wife and son also contracted the disease.

**Infantile Paralysis Quarantine to be Removed.**—The infantile paralysis quarantine will be raised, November 1, according to a recent report from the city health department, Baltimore. Only three new cases have been found in the past two days, and this has been about the average for the last ten days. The conclusion reached is that the epidemic stage of the poliomyelitis has been warded off, and that there is no pressing fear of other outbreaks of the disease in the city. ——There were still a number of cases reported to the state department of health during the week, especially from Garrett County, where there has been an epidemic of the disease, and conditions in the counties are not as favorable as in Baltimore.

**Municipal Hospital Planned.**—It has been announced that the United States government will pay Baltimore $176,775 for the quarantine station and the money thus obtained will be devoted to the establishment of a general municipal hospital. The plans will be worked out by the board of estimates before it completes the tax levy for 1917. The need of such an institution was emphasized by the outbreak of infantile paralysis. The proposed hospital will be for the treatment of patients under the direction of the supervisors of city charities and cared for outside Bay View. The supervisors of city charities have contracts with several local hospitals, the cost of the service approximating $95,000 a year. The city will formally transfer the quarantine station to the federal government as soon as the report of the appraisers is ratified. Dr. Thomas L. Richardson and the other physicians at the station will be retained by the U. S. Public Health Service, which will operate the station. The city is to have the privilege of sending smallpox patients to the quarantine at a charge of $1 a day per patient.

## NEW YORK

**Medical Library Meeting.**—The annual meeting of the Utica Medical Library Association was held, October 16, and the following officers were elected: president, Dr. Frederick T. Owens; vice president, Dr. William O. Weiskotten; secretary, Dr. John Gromann, and treasurer, Dr. John W. Rayhill.

**Physician Gives Library to Society.**—Dr. John G. Orton, Binghamton, has donated his entire medical library, which he has been collecting for sixty years, to the Binghamton Academy of Medicine, and at the meeting of the organization a movement was projected to procure and maintain a building or home for the use of the society to house the library and to include also an assembly hall and laboratory.

**Tuberculosis Items.**—The chairman of the plan and scope committee of the board of supervisors of Rensselaer County has received a letter from the state deputy commissioner of public health to the effect that a tuberculosis hospital of 200 beds, with a water supply and sewage disposal system, can be built on the site selected in the county for $150,000.——The board of managers of the Oneida County Hospital reported that there are now 144 patients in the institution, and the first of a series of portable houses for tuberculosis patients is being erected on the new addition of the hospital property.

## New York City

**Fordham Medical Alumni Organize.**—The Fordham Medical School Alumni met, October 27, and organized an association, electing the following officers: president, Dr. James McSweeney; vice president, Dr. John J. Sheridan, and secretary-treasurer, Dr. Francis X. McGovern. Father J. Tivnan addressed the association on "The Menace of Birth Control."

**Society Meetings.**—The meeting of the New York Academy of Medicine, November 2, was held with the cooperation of the section on genito-urinary diseases. Dr. Hugh H. Young of Johns Hopkins Hospital, Baltimore, delivered an address on "The Relation of Chronic Infections of the Genito-Urinary Tract to Obscure Internal Disorders."——The second of the Harvey Society Lectures, delivered at the New York Academy of Medicine, November 4, was on the subject of "The Rôle of Fat in Diabetes" and was delivered by Dr. Frederick M. Allen of the Hospital of the Rockefeller Institute.

**Personal.**—Dr. Jay F. Auner of the Vanderbilt Clinic has located in Des Moines, Iowa, and announces that he will hereafter limit his practice to diseases of the skin and radiology.——Dr. J. Richard Kevin, New York, has returned from his duties with the Twenty-Third New York Infantry on the Texas border, on thirty days' leave of absence.——Dr. William C. Woolsey, Brooklyn, who has been on duty with the American Ambulance, Paris, has started on his return to this country.—Dr. Joseph Lipman, who recently received several gunshot wounds, inflicted by a patient who complained of the treatment given her, is being cared for in the Polyclinic Hospital and will probably recover.

**Poliomyelitis Records.**—*Bulletin No. 43* of the health department gives records of the case fatality, hospitalization and crippling from poliomyelitis during the past summer. The true cases of poliomyelitis numbered 8,927 and the total number of deaths, 2,343, or a case fatality of 26.24 per cent. The patients treated in the hospitals of the department of health numbered 4,474, with a case fatality of 14.59 per cent. The patients admitted to twenty-seven other hospitals in the city numbered 2,663, and showed a case fatality of 14.53 per cent. The patients treated at home numbered 2,040, and showed a case fatality of 63.87 per cent. This high case fatality was mainly due to the fact that these cases were of the severest type. From August 21 to October 13 there were discharged from the hospitals of the department of health 2,058 patients. Of these, 66 per cent. showed evidences of paralysis of some degree; 18 per cent. showed that paralysis had wholly disappeared, while 15 per cent. had not shown paralysis at any time in the course of the disease.

**Paratyphoid Among New York Troops.**—Of 1,100 men of the Fourteenth Regiment who left for Texas, 130 have been or are ill with paratyphoid fever. Of the 1,600 men in the Seventy-First Regiment, there have been to date fourteen cases of paratyphoid fever. The returning troops were ordered to Camp Whitman and while there a large amount of laboratory work was done by the New York State Department of Health. The examination of 850 stools revealed forty carriers, many without any history of illness. Before returning to New York all members of the Fourteenth and Seventy-First regiments received one dose of paratyphoid vaccine. In the case of the Fourteenth, because of the high degree of infection, a complete vaccination was insisted on. After returning to New York, the troops were kept at the armory, under supervision for two weeks, before being mustered out. The chronic carriers have been made known to the board of health, and will be under their supervision. The vaccination of the families of these carriers will also be carried out by the department of health.

**The Tuberculosis Situation in New York.**—The Bureau of Public Health Education has prepared a review of the

present status of antituberculous work in this city. The statement is made that despite the strenuous antituberculous work of the past ten years, and the annual expenditure of hundreds of thousands of dollars, one seventh of all deaths are due to tuberculous infection. Though progress is slow, it is shown that tuberculosis is gradually being reduced; thus in this city the pulmonary tuberculosis rate per thousand of population has fallen from 2.37 in 1900 to 1.61 in 1915. According to the figures prepared by the health department there are, at the present time, over 35,000 recognized cases of pulmonary tuberculosis in the city. Only 10 per cent. of these patients are under the care of a private physician. This fact directly indicates the economic injury caused by the disease. It is estimated that the annual loss to the city from tuberculosis is $10,000,000. Over 6,000 patients with advanced disease are being cared for in institutions within the city, while nearly 2,800 are being cared for in out-of-town institutions. This report discusses the housing problem as a factor in the production of tuberculosis, and suggests that a great need at the present time is employment for the consumptive under conditions that will not only conserve his health but will protect his fellow workmen, and also the need of some method by which remuneration may be proportioned to the patient's needs and not merely to his earning capacity.

## NORTH DAKOTA

**Health Department for Fargo.**—A committee has been appointed consisting of Drs. Edward M. Darrow, Olaf Sand, Leunis Van Es, the mayor and a member each of the board of city commissioners and commissioners of Cass County, to make a thorough investigation as to the advisability of the establishment of a permanent health department in Fargo under a trained full time health officer.

**Hospital News.**—The Luther General Hospital, Harvey, was formally opened last week. The institution has accommodation for fourteen patients and it is expected that a new wing will be added in the spring. The institution is under the charge of Dr. Arnt T. Floew.——At the annual meeting of the Minot General Hospital Association, October 19, it was decided to go ahead with the selling of stock of the association and to maintain a school for nurses in connection with the institution. The directors have agreed on the general plan of the building, which is to be on the unit system, the first unit of which will cost $85,000.

**Personal.**—Dr. LeRoy H. Labbitt has been appointed examining surgeon at Enderlin for the Minneapolis, St. Paul and Sault Ste. Marie Railway.——Dr. George W. Williamson, Grand Forks, has been appointed a member of the national committee on uniform laws and state regulations by the Federation of Medical Boards of the United States.——Dr. Carl F. Raver, Grand Forks, has been appointed health officer of Aberdeen, S. D.——Dr. Leverett D. Bristol, for two years professor of bacteriology and hygiene and director of the City Public Health laboratory at the University of North Dakota, University, has accepted the newly created Boston Dispensary fellowship in public health in the Department of Preventive Medicine at Harvard Medical School, Boston.——Dr. Nils Myklestad, Minot, has returned after four months in the hospitals of Germany and Austria.

## PENNSYLVANIA

**Hospital Activities.**—Hospital day exercises were held at St. Luke's Hospital, South Side, Bethlehem, October 18. The principal address was delivered by Dr. Benjamin F. Royer of the state health department.——The Sacred Heart Hospital, Allentown, is undertaking a campaign to raise $150,000. Dr. Henry I. Klopp is chairman of the citizen committee, which consists of 100 business men, who will be in charge of the campaign.——The board of health of Erie has asked the appropriation of $10,000 for the construction of new buildings at the Municipal Hospital.

**Personal.**—Members of the Blair County Medical Society tendered a farewell banquet at Altoona, to Dr. Samuel Calvin Smith, Hollidaysburg, who is about to locate in Philadelphia.——Dr. and Mrs. Ambrose J. Herr, Lancaster, celebrated the fiftieth anniversary of their marriage, October 4.——Dr. Daniel A. Webb, Scranton, who is now on duty at the Military Hospital at Shorncliffe, England, expects shortly to be sent to France.——Dr. George J. Van Vechter has been appointed director of the department of health of Scranton.

### Philadelphia

**Memorial Meeting for Dr. Rodman.**—At the stated meeting of the College of Physicians, Philadelphia, November 1, Dr. James W. Holland read a memoir of the late Dr. William L. Rodman.

**Dr. Rush's Birthplace Destroyed.**—On October 7, fire of undetermined origin destroyed the historic stone barn built in 1700 on the Parry estate at Torresdale. The barn is said to have been the birthplace of Dr. Benjamin Rush.

**Glanders Prevalent.**—On October 25, Dr. Wilmer Krusen, director of public health and charities, issued a warning to owners of horses, calling attention to the prevalence of glanders in this city and advising them to protect their stock. Since January 1,180 horses have been affected.

**Pediatric Societies' Joint Meeting at Boston.**—The joint meeting of the Philadelphia Pediatric Society, the Pediatric Section of the New York Academy of Medicine, the New York State Society, the New Jersey Pediatric Society and the New England Pediatric Society was held in Boston, November 4. The Harvard Club was the headquarters.

**Med.-Chi. Men for University Faculty.**—The following former members of the Medico-Chirurgical College Faculty have been duly elected members of the Faculty of Undergraduate Medicine in the University of Pennsylvania: Dr. Joseph McFarland, professor of pathology; Dr. John C. Heisler, professor of anatomy; George H. Meeker, Sc.D., LL.D., professor of chemistry; Dr. Horatio C. Wood, Jr., professor of pharmacology and therapeutics, and Dr. Seneca Egbert, professor of hygiene.

**Personal.**—Dr. C. Lincoln Furbush, who was appointed, October 26, special assistant to the American Embassy at Berlin, will leave for Germany about the middle of November. He will also act as medical inspector to the allied prison camps in Germany.——Dr. Wilmer W. Trinkle has been appointed coroner's physician, to succeed the late Dr. Thomas J. Morton.——Dr. J. Torrance Rugh has been made visiting orthopedic surgeon to the West Philadelphia Hospital for Women.——Dr. Leon Brinkmann succeeds Dr. Melvin M. Franklin as visiting surgeon to the Jewish Hospital, the latter becoming a consulting surgeon.

## GENERAL

**Southern Physicians to Meet.**—The annual meeting of the Southern Medical Association will be held in Atlanta, November 13 to 16, under the presidency of Dr. Robert Williams, Jr., Charleston, S. C.

**New England Surgeons Organized.**—More than eighty surgeons of New England attended the inaugural meeting of the New England Surgical Society at Boston recently. Dr. Samuel J. Mixter, Boston, was elected president.

**Guarding Against Typhus.**—The United States Public Health Service has erected disinfecting stations in Texas at Eagle Pass, El Paso, Brownsville and San Antonio, in order to prevent typhus fever from crossing the Mexican border to the United States. A civil engineer, driven out of Mexico, is said to have died from typhus fever at El Paso, October 19.

**Personal.**—Maj. Thomas L. Rhoads, M. C., U. S. Army, who recently returned from Panama to await orders from the War Department, has been notified that he is to go to France to become the head of a hospital at Passy, near Paris, which has been presented to the French government by four Americans. Major Rhoads has been given four months' leave of absence for this purpose.

**Railway Surgeons Meet.**—At the second annual meeting of the Chicago Great Western Railway Surgeons' Association, held at the Hotel Sherman in Chicago last week, the following officers were elected: president, Dr. Paul E. Gardner, New Hampton, Iowa; vice president, Dr. Overton Brooks, Chicago, and secretary-treasurer, Dr. Orry C. Morrison, Carroll, Iowa. The 1917 meeting will be held at Red Wing, Minn.

**Health Specialists Hold Meeting.**—At the annual meeting of the American Public Health Association, held in Cincinnati, October 24 to 26, under the presidency of Dr. John F. Anderson, U. S. P. H. S., the following officers were elected: president, Dr. William A. Evans, Chicago; vice presidents, Drs. John H. Landis, Cincinnati; Maurice McD. Seymour, Regina, Sask., and Manuel Iglesias, Vera Cruz, Mexico; secretary, S. N. Gunn, Boston, and treasurer, Lee K. Frankel, New York.

**Fraudulent Subscription Canvassers Arrested.**—Word has been received that the subscription canvassers who falsely represented themselves as students in a contest for college scholarships and about whose activities frequent warnings have appeared in THE JOURNAL, have been arrested in Cali-

fornia. On the various subscription blanks used were the titles—Michigan Educational Association, Cornell Educational Association, National Educational Association, and United Students Aid Society. An endeavor is being made to collect evidence for use in prosecution. Any one victimized who desires to aid may address THE JOURNAL.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Brooklyn Hospital, $5,000, by the will of Miss Elizabeth B. Estes.

Long Island College Hospital, $20,000; Brooklyn Hospital, $12,000, and House of St. Giles the Cripple, Brooklyn, $10,000, by the will of Francis S. C. A. Ripley.

Beth Israel Hospital, New York, an annual income of $500, and Hospital for Deformities and Joint Diseases, an annual income of $100, by the will of Harris Wolff.

Greenville (S. C.) Hospital, a donation of $6,300, from the Ladies' Auxiliary Association.

Norwegian Lutheran Deaconess Home and Hospital, Chicago, $150,000, as the result of a ten-day campaign.

Jackson Park Sanitarium, Chicago, $1,400, the result of a sale held at the residence of Mrs. Edward Tilden, October 19.

For a tuberculosis ward for negro women and children at the Charity Hospital, New Orleans, subscription of $1,543.84 of the $3,500 required.

International Hospital, Tokyo, Japan, subscriptions of $32,000, announced at the general convention of the Protestant Episcopal Church, St. Louis, October 21.

**American College of Surgeons.**—On Friday evening, October 27, the annual business meeting of the American College of Surgeons was held in Philadelphia and 232 fellowships were conferred. The following officers were elected: president, Dr. George W. Crile, Cleveland; first vice president, Dr. Robert G. LeConte, Philadelphia; second vice president, Dr. Rudolph Matas, New Orleans; general secretary, Dr. Franklin H. Martin, Chicago, and treasurer, Dr. Albert J. Ochsner, Chicago. At this meeting the question of the development of a closer relationship between the surgeons of North and South America was discussed. The following committee was appointed to visit South America and to invite the medical men of the Latin-American republics into closer communion with the doctors of the North: Dr. Edward Martin, Philadelphia; Drs. Charles H. and William J. Mayo, Rochester, Minn.; Drs. Franklin H. Martin and Albert J. Ochsner, Chicago, and Dr. Franklin F. Simpson, Pittsburgh.

**Clinical Congress of Surgeons.**—The seventh annual meeting of the Clinical Congress of Surgeons was held in Philadelphia, with headquarters at the Bellevue-Stratford Hotel, October 23 to 27. Twenty medical societies and forty hospital organizations of Philadelphia acted as hosts, and Dr. Robert G. LeConte was chairman of the committee of arrangements. The retiring president responded to the address of welcome and the new president, Dr. Fred Bates Lund, Boston, was inducted into office. Drs. Jasper Halpenny, Winnipeg, Man., and Samuel M. D. Clark, New Orleans, were inaugurated as vice presidents. The subject of the presidential address, delivered by Dr. Lund, was "The Indications for Cholecystotomy." More than 1,600 members were registered from all parts of the United States and Canada and abroad. The regular meetings were conducted from Monday until Friday. The first three meetings were for the visiting surgeons. Papers were presented and discussed by the masters in surgery. The evening sessions were unusually popular as evidenced by the fact that the large ball room and gallery of the Bellevue-Stratford Hotel were crowded. The last evening meeting (Friday), known as the public meeting, was held in Witherspoon Hall. At the regular business meeting held Thursday, October 26, the following officers were elected: president, Dr. John G. Clark, Philadelphia; first vice president, Dr. George Henderson Lee, Galveston, Texas; second vice president, Dr. Edgar W. Allin, Edmonton, Alberta, Canada; secretary general, Dr. Franklin H. Martin, Chicago (reelected), and treasurer, Dr. Allen B. Kanavel, Chicago (reelected). The next meeting place of the congress will be New York in 1917.

**War Hospital Exhibit.**—The first base hospital ever established for exposition purposes held a special exhibit for the visiting physicians of the Clinical Congress of Surgeons at the camp site on Belmont Plateau, Fairmount Park, Philadelphia, October 28. Dr. Franklin Martin, Chicago, and Col. Jefferson R. Kean, director general of Military Relief Red Cross, are the originators of the idea to establish exhibition base hospitals. Twenty-six similar models will be shown in different parts of the country and experts figure that at least twice as many should be at the disposal of the government in case of war. This exhibit was given by the Lakeside Unit Red Cross Hospital of Cleveland. Dr. George W. Crile was director of the unit and his principal coadjutor was Maj. H. W. Jones of the regular army, who had active charge of the demonstration. The staff was as follows: Dr. A. R. Warner, quartermaster; Dr. W. R. Barney, adjutant; Dr. L. B. Sherry, registrar, and Miss G. E. Allison, chief nurse. The tented hospital city was erected in the form of a hollow square. On the extreme flanks were the quarters of the surgeons and nurses, and the mess tents where the cooks prepared food for both unit personnel and the patients. The foreground was occupied with the administration offices, equipped like any regimental site in the regular army. Within the hollow square were pitched the tents that comprise the wards, accommodating 500 wounded, with the necessary tents for the storage of equipment, linen, surgical instruments and utensils. To each tent were assigned three nurses, a head nurse and two assistants. The entire personnel required one director and three assistants; six staff surgeons and five staff physicians; orthopedist, ophthalmologist, neurologist, bacteriologist, roentgenologist, two dentists, registrar, quartermaster, chaplain and two assistants, two pharmacists, fifty nurses, twenty-five aids, two laboratory assistants, eleven men in the record station, ten men in the supply station, twenty-eight in the subsistence department, twenty-six orderlies and sixteen civilians for various duties. The hospital equipment as it stood was estimated to be worth $70,000, of which half was in the cost of the surgical instruments. These were loaned by Dr. George E. Brewer and were the possessions of his hospital unit of the Presbyterian Hospital of New York. Col. George H. Penrose, commandant at the Schuylkill Arsenal, loaned the tentage.

## FOREIGN

**Death in the Profession Abroad.**—E. B. Barnet, one of the organizers of the National Board of Health in Cuba and chief of its publishing department, founder of the *Revista de la Asociacion Medico-Farmaceutica* and official delegate from Cuba to various international medical and public health congresses.

**Cancer Research in Norway.**—The Norwegian Cancer Research Association pays a crown (27 cents) for each report of a case of cancer in Norway sent in to the secretary, Dr. F. G. Gade, Christiania. The association also examines and reports on specimens of tissue suspected of being cancerous, from the living subject or cadaver, with no expense to physician or patient. Question blanks for recording cases are sent on demand.

**Soap Cards in Germany.**—Our Christiania exchange relates that the ration allowed in Germany of soap and other washing materials made with grease has been definitely established as 50 gm. toilet and barber soap for each person per month, or 250 gm. soap powder. Green soap is not dispensed at all. Hospitals are given soap to correspond to the amount of their wash, but physicians, midwives and nurses get their soap on their bread card. This entitles physicians to 100 gm. toilet soap and 500 gm. other soap per month. It seems that the regulation of the food supplies was arranged without consulting the medical profession, and many difficulties have arisen in getting suitable extra fare for the sick, as the regulation of the milk, butter, cream and meat supplies is in the hands of separate departments.

**Collective Study of Operations for Goiter.**—The Swiss Surgical Association has sent out a question blank throughout Switzerland to collect data on operative treatment of goiter. All cases of radical operation for simple goiter and for exophthalmic and malignant goiter are to be listed separately, as also all minor operations on the thyroid. The complications, secondary lesions, recurrences, mortality, and causes of death are to be recorded, with the operative technic, grouping the cases by years and mentioning the very earliest symptoms. Those able to supply data for deceased colleagues are asked to honor their memory by doing so. The data are to be sent as soon as possible to the secretary of the association, Dr. F. Steinmann, Bern. All will be held strictly confidential and returned to the writer. The data are to be worked up and the summary presented at the next annual meeting of the association.

**Improvised Hospital for Contagious Diseases.**—M. Labbé has been called on to organize a number of contagious disease hospitals for the French troops at the front, and has encountered numerous practical difficulties as he relates in the *Annales de Médecine*, 1916, iii, 436, in what he calls a critical review of the whole subject. He tells how he surmounted the various difficulties, utilizing local resources

and warding off possible factors of harm. A laboratory should be in the same building, he insists, so that the proper measures can be taken without a moment's delay when the bacteriologic diagnosis is once made. One great advantage of these military hospitals is that the physician in charge has all the reins in his own hands, and can supervise personally every detail. The twenty-three page article is intended for the novice in such matters and gives the rudiments as well as the minutest data for getting up such a hospital and running it satisfactorily at the least expense.

## CANADA

**Hospital News.**—The Canadian Hospitals Commission is securing the Sanita, Chatham, Ont., and another hotel at Preston, Ont., where there are mineral waters. These will be used for the benefit of returned soldiers.——The Ontario government has agreed with the Canadian Hospitals Commission to bear the expense of enlarging sanatoriums at London and Hamilton, to the extent of $25,000 for the former and $15,000 for the latter. This will give larger accommodation for returned tuberculous soldiers.——Arrangements have been made by the Canadian Hospitals Commission to treat 1,000 to 1,500 Canadian soldiers suffering with rheumatism, now in England. They will be brought to Canada as soon as all arrangements are fully completed.——Fire destroyed St. Elizabeth Hospital, Farnham, Que., October 25. Twenty-seven lives were lost. The hospital is under the management of the Grey Nuns. The institution was partly a school for children. It is thought that the fire escapes were defective.

**Personal.**—Lieut.-Col. George Nasmith, C. M. G., chief of the Toronto Laboratories, who has been on active service in France, has resigned and is returning to take up the duties of his office in Toronto.——Dr. Helen MacMurchy, inspector of hospitals, prisons and public charities for Ontario, was entertained by government officials of Manitoba during a recent trip West.——Dr. F. W. Schofield of the laboratory of the Ontario Board of Health has gone to Seoul, Corea, to be professor of bacteriology and hygiene in the medical college there.——It is reported that Lieut.-Col. J. George Adami, professor of pathology in McGill University, Montreal, who held the position abroad of official Canadian recorder of medical history of the war, has resigned and will soon return to McGill.——Dr. Hadley Williams, London, Ont., has been appointed chief surgeon, to succeed Lieut.-Col. Irving H. Cameron (who has returned to Toronto) in the Ontario Military Hospital, Orpington, England.——Dr. George E. Armstrong, chief surgeon of the Royal Victoria Hospital, Montreal, has been appointed consulting surgeon to the Canadian overseas forces, with the rank of lieutenant-colonel.——Capt. H. B. Paul has been appointed commandant of the new Canadian hospital at Otchingill, near Shorncliffe, England.——Maj. C. A. Warren, Toronto, has been promoted to the rank of temporary lieutenant-colonel and is now acting A. D. M. S. at Camp Borden, Ontario.——Capt. D. A. McClenahan, Hamilton, Ont., district medical officer of health in that part of Ontario, is reported to have been wounded in France while commanding a draft of a sanitary section.——Captain Whittemore is reported wounded in recent fighting and now to be in Gray's Inn Road Hospital, London, England.——Lieut.-Col. Clarence Starr, Toronto, has been called to London, England, to do special orthopedic surgery for a period of six months.——Dr. John R. Irwin, Coburg, Ont., who has served for a year with the Royal Medicals in France, was recently summoned before the king to receive the Military Cross. Dr. Irwin was attached to the Second Worcestershire Regiment and went down into the front line at midnight when the enemy blew up a mine, burying two Canadian soldiers. He went down the shaft 30 feet and out 300 feet, bent double excepting when he had to crawl on hands and knees, and spent an hour working with the men.——Capt. Howard Brown Jeffs, Toronto, arrived home wounded early in October, but returns in January.——Lieutenant-Colonel McCombe, A. D. M. S., of the London area, has tendered his resignation and his place is being taken by Lieutenant-Colonel Watt, Winnipeg, who has been in command of the Granville Hospital at Bramshott, England.——Lieut.-Col. A. T. Shillington, Ottawa, A. D. M. S., of the personnel at headquarters, will take a similar position at Shorncliffe, England.——Lieutenant-Colonel Peters, Montreal, now in command of No. 9 Field Hospital, is succeeding Colonel Shillington.——Lieutenant-Colonel Wilson, A. D. M. S., Shorncliffe, will go to London as deputy director, vice Lieut.-Col. Murray Maclaren, C. M. G., who will probably take charge of a hospital in England.

## PARIS LETTER

PARIS, Oct. 5, 1916.

### Death of Dr. Valentin Magnan

Psychiatry has suffered a great loss in the death of Dr. Magnan, honorary chief physician of the Asile Sainte-Anne at Paris, recently deceased at Suresnes (department of the Seine).

Valentin-Jacques Joseph Magnan was born at Paris, March 17, 1835. He was intern at the Salpêtrière under Baillarger and Falret, and, from the commencement of his studies, occupied himself with mental diseases. One year after receiving the degree of doctor of medicine, he was appointed physician of the Asile Sainte-Anne (1867). The following year he inaugurated in his service a clinical course which drew many French and foreign physicians; but although in reality a remarkable teacher, the faculty of medicine never confided a chair to him. During the forty years in which he remained at the asylum, Magnan contributed in this manner to the professional education of several generations of alienists. He published a series of interesting works on paresis, on hereditary insanity, on degenerates, on delirium, on sexual perversion and on other subjects. In addition, he carried on an energetic campaign against alcoholism, the ravages of which his experience as an alienist particularly qualified him to appreciate. In 1873 the Académie de médecine awarded the Civrieux prize to him for a memoir on this subject. A number of his lessons have been published under the title "Leçons cliniques sur les maladies mentales," the second edition of which appeared in 1893.

Magnan was elected a member of the Académie de médecine in 1893, and became president of that body in 1915. In his will he has left the sum of 25,000 francs ($4,825), the interest of which is to form a triennial prize to be awarded to the author of the best work on psychiatry or to the best study of a mental disease published in the course of the three previous years.

### The War

#### CONTAGIOUS DISEASES AMONG THE TROOPS AT THE FRONT

Dr. Boigey, having observed the development of contagious diseases in a detachment at the front during the year 1915, has noted that notwithstanding fatigue, overcrowding and unfavorable climatic conditions (damp cold, rains, fogs), the total of contagious diseases in this detachment was almost three times less than in time of peace. The figures for the year 1915 are:

| Disease | No. of Cases |
|---|---|
| Measles | 176 |
| Scarlet fever | 122 |
| Mumps | 422 |
| Diphtheria | 105 |
| Cerebrospinal meningitis | 28 |
| Total | 853 |

According to medical statistics for similar forces of the army in time of peace, the mean annual number of cases of contagious diseases admitted to the military hospitals would have been:

| Disease | No. of Cases |
|---|---|
| Measles | 730 |
| Scarlet fever | 295 |
| Mumps | 1,050 |
| Diphtheria | 66 |
| Cerebrospinal meningitis | 16 |
| Total | 2,157 |

In spite of the extreme contagiousness of measles and scarlet fever, they did not spread among troops bivouacked or camping in the war zone in makeshift shelters where there was the utmost overcrowding. Dr. Boigey attributes this relative immunity to life in the open air and to the hyperoxygenation. Except for one epidemic episode of mumps which occurred in November in a camp near the front, it seemed to Dr. Boigey that repeated contact did not possess the importance usually attributed to it in the communication of contagious diseases. These facts lead even the most skeptical to believe that predisposition plays the most important rôle in this matter, and that the pathogenic seed, however abundant and however virulent, will not germinate in an inappropriate soil.

#### SANITARY TEAMS IN THE ARMY

The undersecretary of state for the military health service has decided on the immediate constitution of two crews or teams in each region to be called sanitary teams, intended for the service of the army. The object is to insure hygienic and sanitary measures necessary for the health of the troops

in the war zone. Each team will consist of fifteen of the youngest men from the auxiliary service, who, from a technical point of view, will be under the orders of a pharmacist of the auxiliary forces, and will be commanded by a sergeant and two corporals. Men of these teams will receive special instruction, theoretical and practical, in the general hygiene of active service, notably, that which concerns lime washing, disinfection of latrines and disposal of manure, the fight against flies and mosquitoes, the destruction of garbage, the killing of lice, bathing arrangements, and the purification and protection of drinking water. As far as possible, each member will specialize in one part of this program so that he may, if necessary, be able to direct fatigue parties without hygienic instruction who may be called on to work under his orders. Distributed among the armies where needed, these teams are intended to insure a permanent hygienic surveillance and action which the camps lack at present, owing to frequent displacements of troops. These orders will go into effect October 15.

THE LIBRARY FOR THE BLIND

The Valentin Haüy Association has established a house for the blind at rue Duroc 9, the perfect equipment and services of which constitute a synthesis of the progress hitherto realized in construction, and in the technical and professional education of those who have lost their sight. This house contains a library of more than 45,000 volumes in Braille characters, to which acquisitions are constantly being added, and also various periodicals of interest. The annual circulation is more than 50,000 volumes, lent to more than 2,000 readers. It furnishes more particularly municipal libraries, and has at present sixty-seven depots in the departments. This institution, which is the best of its kind in the world, and intended to be useful to the blind not only of France, but also of foreign countries, will prove of the greatest value to those who have lost their sight during the war.

SALE OF SKIMMED MILK

At the last meeting of the Council of Public Hygiene of the department of the Seine, Professor Letulle read a report on an ordinance made by the mayor of a township of this department, regulating the transportation and sale of skimmed milk. A discussion ensued in which most of the members of the council took part. A very serious question is involved, as for children, even more than for adults, skimmed milk is an absolutely insufficient aliment, and consequently, dangerous. If any proof is necessary, it is to be found in the fact that in certain districts of the North where the sale of skimmed milk has greatly increased, infant mortality has been augmented. As a result of this report and of the discussion on the proposition of Vaillard and Sellier, the following resolution was passed: "As the consumption of skimmed milk, an insufficient aliment for adults, constitutes a real danger for children and for sick persons, the opinion of the council is that the prefect of police should refuse his approval of the municipal ordinance in question."

## LONDON LETTER

LONDON, Oct. 16, 1916.

### The War

A NEW HOSPITAL FOR FACE INJURIES

In previous letters to THE JOURNAL, the advantage was pointed out of the practice now in vogue of segregating various kinds of war injuries in special hospitals. In the American Hospital at the Lycée Pasteur was first shown the advantage of providing special treatment for the disfiguring injuries of the face and jaws. A new hospital for these injuries has been formed in London. It contains thirty beds, and is completely equipped as a "maxillofacial hospital"; in other words, as a hospital where jaw injuries and injuries to the face may be dealt with by plastic surgeons and dentists. This work is specialized in the highest degree: it involves the replacing of lost bone by splints made of vulcanite and other materials; the resetting of badly healed fragments; the reduction of deformities; the grafting of skin to cover unhealed wounds, and, finally, the making of artificial skin areas, and even whole organs, as the ear and nose.

FOOD PRICES

Since the war began, the price of food has nearly doubled, which is a serious matter for many people. The board of trade has appointed a committee to deal with the question, and the committee has unanimously recommended, among other things: (1) the speeding up of mercantile shipbuilding; (2) the extension of the restrictions on the importation of superfluities; (3) the development of the government meat-purchase policy; (4) the imposition of conditions on merchants and retailers of government-bought meat to secure sale at reasonable prices; (5) the voluntary institution of one meatless day a week; (6) the empowering of local authorities to open municipal milk, meat, bacon and other foodstuff shops, where retailers are taking excessive profits, and (7) the revision by employers and public bodies of their payrolls in favor of the lower paid workers. Some of the members of the committee went further, and in a minority report asked the government to purchase meat and bacon on a large scale, and where possible become the sole purchaser and give the public the full advantage of this mode of buying. One of the causes of dearness of meat is the great demand of the allied army. Even in 1915 its consumption of frozen beef was so great that only half the usual supply was available for the civilian population.

### Miners' Phthisis in South Africa

A government committee appointed to report on the working of the miners' phthisis acts in South Africa states that the disease is due to the inhalation of silicious dust. When inhaled over long periods, this is carried into the substance of the lung itself, setting up inflammatory changes and leading to the formation of new fibrous tissue. Though the disease begins as a silicosis, the affected lung is apt to become tuberculous. It is believed that the very fine dust (particles under 12 microns in diameter) is the most important factor in the causation of the disease. The fumes of explosives are a subsidiary factor in the development of the disease. Ventilation and water spraying are the only means of prevention, and there are practical difficulties in the way of fully satisfactory arrangements.

### The English Face Altering

In the section of anthropology of the Annual Meeting of the British Association for the Advancement of Science, Professor Keith, in a paper on "Recent Modification in the Facial Type of the English People," described a modification of the cheek bones which, he said, is part of the general reduction which is affecting all the parts concerned in the act of chewing. There is also to be seen in a considerable proportion of modern skulls a change in the bones of the nasal aperture, which is becoming narrow. The most definite changes in the modern skull are in the jaws, gums, palate and teeth. In every tenth modern woman and in every fifteenth modern man there are deficiencies in the development of the jaws, contractions of the palate, and irregularities of the teeth, which did not become common until quite recent centuries. A minute comparison of skulls which Keith has made shows that the English face has become narrower and longer. He considers that there is urgent need of a physical survey and census of the British people. Physical changes are taking place, and some of them are not for our ultimate good.

## Marriages

WALTER LEE NICHOLLS, M.D., to Mrs. Theresa Kennedy O'Ferrall, both of Baltimore, at Washington, D. C., October 19.

CLAYTON WILSON KLONTZ, M.D., to Miss Lula Marion Swanson, both of Chicago, at Crown Point, Ind., October 19.

GEORGE FRANKLIN WORCESTER, M.D., Merrimac, Mass., to Miss Blanche P. Thompson of Haverhill, Mass., October 18.

CHARLES ARTHUR SIMA, M.D., Chicago, to Miss Alice Kathryn Burtch of Kansas City, Mo., October 21.

FRANK M. MCCARTNEY, M.D., to Miss Elizabeth M. Mitchell, both of Denver, at Littleton, Colo., October 16.

JOHN ALBERT VAN KIRK, M.D., Watseka, Ill., to Miss Maude Florence Steele of Kentland, Ind., October 28.

CARL SCHUMANN, M.D., Greene, N. Y., to Miss Nina C. Winn of Pageville, Ky., October 25.

DONALD KEYES CLARK, M.D., to Miss Susan Frances Brooks, both of Louisville, Ky., October 18.

LORAH OTHO FOX, M.D., to Miss Emily Kyle Vawter, both of Ansted, W. Va., October 25.

SIDNEY COHN, M.D., New York, to Miss Dorothea Cuddy of Stamford, Conn., October 16.

JOSEPH R. MITCHELL, M.D., to Miss Rhoda A. Hess, both of Chicago, October 4.

## Deaths

**Owen Jason Evans, M.D.,** Minneapolis; Albany (N. Y.) Medical College, 1862; aged 76; formerly a Fellow of the American Medical Association; a veteran of the Civil War, in which he served as surgeon of the Fortieth New York Volunteer Infantry; once vice president of the Minnesota State Medical Association and president of the Hennepin County Medical Society; a member of the city council of Minneapolis; from 1878 to 1882 health officer of Minneapolis; a member of the board of education in 1881; and a member of the legislature in 1884; died suddenly at a banquet of the John A. Rawlins Post, G. A. R., October 17, from heart disease.

**Frederick Charles Weaver, M.D.,** Dayton, Ohio; Miami Medical College, Cincinnati, 1894; aged 45; a member of the Ohio State Medical Association and of the Association of Military Surgeons of the United States; who entered the Ohio National Guard in 1887 and after passing through the various grades became major and surgeon in 1900, having had service during the Spanish-American War and as acting assistant surgeon, U. S. Army, in the Philippine Islands; visiting physician to St. Elizabeth's Hospital, Dayton, and surgeon of Dayton police department from 1894 to 1899; died at his home, October 14.

**Alexander Augustus Uhle, M.D.,** Philadelphia, Pa.; University of Pennsylvania, Philadelphia, 1898; aged 42; a Fellow of the American Association, and College of Physicians of Philadelphia; assistant instructor in genito-urinary diseases in his alma mater; assistant genito-urinary surgeon to the Philadelphia Hospital and chief of the urologic dispensary of the German Hospital; after having been given a local anesthetic, preparatory to the performance of a minor operation on the throat; died in the Medico-Chirurgical Hospital, Philadelphia, October 22, from heart disease.

**Edward Howe Grannis, M.D.,** Menomonie, Wis.; Hahnemann Medical College, Chicago, 1875; aged 62; formerly a Fellow of the American Medical Association; a member of the State Medical Society of Wisconsin, and of the Association of Military Surgeons of the United States; surgeon of the Third Wisconsin Infantry, U. S. V., during the war with Spain, with service in Porto Rico; for two years surgeon-general of Wisconsin; a specialist on diseases of the eye, ear, nose and throat; died at his home, October 14, from pernicious anemia.

**Nathaniel Matson, M.D.,** Brooklyn; New York University, New York, 1864; aged 77; formerly a Fellow of the American Medical Association; a member of the Medical Society of the City of New York; a member of the medical staff of Bushwick Hospital and Bethany Deaconess' Home, Brooklyn; a practitioner of Brooklyn for more than half a century, and a veteran of the Civil War, in which he served as surgeon of the First Connecticut Volunteer Heavy Artillery; died at his home, October 15.

**Eugene Clarence Dunn, M.D.,** Fresno, Calif.; New York University, New York, 1881; aged 62; a member of the Medical Society of the State of California and a practitioner of Fresno for twenty-seven years; formerly division surgeon for the Santa Fe System at San Marcial, N. M.; died in the Burnett Sanitarium, Fresno, October 14, from nephritis.

**Henry Joseph McKenna, M.D.,** Long Island City, N. Y.; University and Bellevue Hospital Medical College, New York, 1901; aged 37; a member of the Medical Society of the State of New York; since 1904 consulting surgeon to St. John's Hospital, Long Island City; died in the Towns Private Sanitarium, Manhattan, October 17, from nephritis.

**Joseph Ransom Brown, M.D.,** Seward, N. Y.; Albany (N. Y.) Medical College, 1868; aged 68; a Fellow of the American Medical Association; a veteran of the Civil War and acting assistant surgeon, U. S. Army, until 1877; health officer of the town of Seward and since 1897 postmaster; died at his home, October 13, from arteriosclerosis.

**Frank S. Stirling, M.D.,** Lewiston, Idaho; Cooper Medical College, San Francisco, 1864; aged 80; a member of the Idaho State Medical Association; formerly surgeon for the Pacific Mail Company and later a surgeon in the Modoc War; acting assistant surgeon, U. S. Army, in 1878; and on duty at Fort Lapwai; died at his home, October 15.

**Isaac Robinson Godwin, M.D.,** Fincastle, Va.; Medical College of Virginia, Richmond, 1860; aged 79; assistant surgeon in the Confederate service during the Civil War; formerly a Fellow of the American Medical Association; a member of the Medical Society of Virginia and vice president in 1877; died at his home, October 1.

**Charles William Penn Brock, M.D.,** Richmond, Va.; Medical College of Virginia, Richmond, 1859; aged 80; a member of the Medical Society of Virginia and one of the best known surgeons of the South; chief surgeon on the staff of Major General Kemper, C. S. A., during the Civil War; died at his home, October 19.

**Chester L. Fought, M.D.,** formerly of Erie, Mich.; Western Reserve University, Cleveland, 1897; aged 45; formerly a Fellow of the American Medical Association; a member of the Michigan State Medical Society; died at his old home in Oak Harbor, Ohio, October 12, from heart disease.

**James P. Connell, M.D.,** Fond du Lac, Wis.; Northwestern University Medical School, Chicago, 1887; aged 54; a Fellow of the American Medical Association; attending surgeon to St. Agnes' Hospital, Fond du Lac; died in that institution while performing a surgical operation, October 21.

**Ellzey Elijah Smith, M.D.,** Blue Mountain, Miss.; Kentucky School of Medicine, Louisville, 1876; aged 68; formerly a member of the Mississippi State Medical Association; died in a hospital in Ripley, Miss., October 13, from axe wounds inflicted by his insane wife.

**Azarie Moise Joseph Provost, M.D.,** Berlin, N. H.; Dartmouth Medical School, Hanover, N. H., 1898; aged 46; a Fellow of the American Medical Association; formerly chairman of the board of health of Berlin; died at his home, September 9, from lobar pneumonia.

**William Lander Settlemyer, M.D.,** Gaffney, S. C.; Kentucky School of Medicine, Louisville, 1892; aged 49; formerly a member of the South Carolina Medical Association; a member of the board of regents of the South Carolina State Hospital; died at his home, October 8.

**Cecil Carew Kimmel, M.D.,** Fort Wayne, Ind.; Indiana Medical College, Indianapolis, 1907; aged 34; a Fellow of the American Medical Association; died in the Lutheran Hospital, Fort Wayne, October 18, from pneumonia complicating typhoid fever.

**Edwin Elliott, M.D.,** Chesaning, Mich.; Detroit College of Medicine and Surgery, 1894; aged 52; formerly a Fellow of the American Medical Association; a member of the Michigan State Medical Society; died at his home, September 23, from angina pectoris.

**Isaac Diller Jones, M.D.,** Murdock, Neb.; University of Nebraska, Omaha, 1895; aged 52; a member of the Nebraska State Medical Association; local surgeon for the Rock Island System; died at his home, October 10, from chronic interstitial nephritis.

**Fenton Devany Drewry, M.D.,** Virgilina, Va.; Medical College of Virginia, Richmond, 1898; a member of the Medical Society of Virginia; aged 39; died, October 18, at the Sara Leigh Hospital, Norfolk, two weeks after an operation for appendicitis.

**John B. Peters,** Macy, Ind. (license, Indiana, 1897); aged 64; a member of the Indiana State Medical Association; died at his home, July 2, from peritonitis following an acute suppurative appendicitis.

**Thomas Corwin Frary, M.D.,** Hoquiam, Wash.; Michigan College of Medicine and Surgery, Detroit, 1890; aged 75; dropped dead on the street at Hoquiam, from cerebral hemorrhage, July 30.

**James H. Shannon, M.D.,** Saco, Me.; Jefferson Medical College, 1884; aged 74; a member of the Maine Medical Association; died at his home, September 14, from cerebral hemorrhage.

**Milton Scott McMurtry, M.D.,** Clovis, Calif.; Missouri Medical College, St. Louis, 1877; Bellevue Hospital Medical College, 1880; aged 60; died at his home, October 3, from pneumonia.

**William Stiles, Jr., M.D.,** Philadelphia; Hahnemann Medical College, Philadelphia, 1875; aged 74; a veteran of the Civil War; died at his home, October 7, from uremia.

**Daniel Newton Mason, M.D.,** Suison City, Calif.; American Medical College, St. Louis, 1879; aged 73; also a druggist; died at his home, October 5.

**Frank Cline Ferguson, M.D.,** Baltimore, Md.; University of Maryland, Baltimore, 1901; aged 37; died at his home, October 11, from pleurisy.

**Stockbridge Patton Graves, M.D.,** Saco, Me.; New York Homeopathic Medical College, 1861; aged 90; died at his home, October 12.

# The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

## SOME MISBRANDED NOSTRUMS

### DR. PORTER'S ANTISEPTIC HEALING OIL

The Paris Medicine Company, St. Louis, Mo., shipped in interstate commerce a quantity of "Dr. Porter's Antiseptic Healing Oil" which the government officials charged was misbranded. The federal chemists analyzed the preparation and reported it to be "essentially a solution of camphor and carbolic acid in cottonseed oil."

The government charged that the following curative claims were false and fraudulent and made knowingly and in reckless, wanton disregard of their truth or falsity:

"An excellent remedy for cuts, sores, old chronic ulcers, corns, bunions, frost bites, sunburn, stings, bites, rash, prickly heat, hives, or all hurts and affections of the skin and mucous membrane."

"Not only is the use of an Antiseptic necessary for the relief of the Throat Trouble, but, as many people know, disease germs are most frequently taken into the system through the mouth. This infection or entry of germs often results when there is even a slight irritation of the Throat, and the use of Dr. Porter's Antiseptic Healing Oil is a wise precaution against serious infectious diseases, such as Whooping Cough, Diphtheria and Tuberculosis."

"Tumors and Cancerous Growths are growths of diseased tissues, and if taken in time and treated with Dr. Porter's Antiseptic Healing Oil they can be removed, and often most serious cases averted."

The company admitted that it was guilty of fraud and falsehood, and the court imposed a fine of $25 and costs.—[*Notice of Judgment No. 3969.*]

### BALLARD'S HOREHOUND SYRUP COMPOUND

"Ballard's Horehound Syrup Compound" was put on the market by James F. Ballard, St. Louis, Mo. The trade package contained, among numerous claims, the following:

"For Consumption, Coughs and Colds."

"For Coughs, . . . Asthma, Dry Hacking Cough, . . . Irritation of Throat, Soreness of Chest, Croup, Spitting of Blood, Influenza, Lung Fever, Whooping Cough &c."

These claims the federal authorities declared were "false and fraudulent" and applied "knowingly and in reckless and wanton disregard" of their truth or falsity. Ballard pleaded guilty and was fined $10 and costs.—[*Notice of Judgment No. 3971.*]

### DR. SHOOP'S NIGHT CURE, DR. SHOOP'S COUGH REMEDY AND DR. SHOOP'S RESTORATIVE

"Dr. Shoop's Night Cure," "Dr. Shoop's Cough Remedy" and "Dr. Shoop's Restorative" are among the many nostrums put on the market by "Dr. Shoop's Laboratories," Racine, Wis. The following claims were made for Dr. Shoop's Night Cure:

"Dr. Shoop's Night Cure will promptly cure Ulceration, Inflammation or Congestion of the Womb, Leucorrhoea, painful Ovaries, falling of the Womb, irregular or painful Menstruation and all diseases or weakness of women. Will cure lacerated or torn Cervix (due to childbirth), Dropsy of the Uterus. Will prevent and cure Ovarian and other tumors when used early and faithfully, including cancerous conditions."

The "Night Cure" was a suppository. Analyzed by the federal chemists, it was reported to be made largely of cacao butter, with zinc carbonate, zinc sulphate and boric acid present. The government charged that the claims quoted above were false and fraudulent and applied knowingly in reckless and wanton disregard of their truth or falsity.

"Dr. Shoop's Cough Remedy" was analyzed by the federal officials who reported that the stuff was "a sirup containing ammonium benzoate and probably white pine tar and gum." Claims were made on the trade package that would lead the purchaser to believe that the preparation was effective as a cure for consumption. These claims the government charged were false and fraudulent and made knowingly.

"Dr. Shoop's Restorative" was sold under such claims as:

". . . for the cure of all diseases of the stomach, liver, kidneys and blood."

"Cures . . . Bright's disease, diabetes . . ."

"The little child . . . . who was suffering with Gastritis, is well. The Restorative has . . . made a perfect cure."

The federal analysts reported that examination of Dr. Shoop's Restorative showed it to contain 10 per cent. of alcohol and 26.9 per cent. of solids with benzoic acid, berberin, hydrastin and sugar present; ash containing iron, sodium, potassium, chlorids, sulphates and phosphates and indications of plant extractive matter. The claims quoted above were, the government officials charged, both false and fraudulent and made knowingly and in reckless and wanton disregard of their truth or falsity. The company pleaded guilty on all three charges and was fined $150.—[*Notice of Judgment No. 3972.*]

### FATHER JOHN'S MEDICINE

Over 4,000 bottles of "Father John's Medicine," prepared by Carleton and Hovey Company, Lowell, Mass., were seized by the federal authorities on the charge that the product was misbranded. The officials declared that the claims to the effect that this nostrum was an efficacious medicine for consumption and that it was "without an equal as a body builder, health food, and for consumption," etc., were false and fraudulent and likely to induce the public "to believe that said drug was a cure for consumption, whereas, in truth and in fact, it was not a cure for consumption." The company, having withdrawn its claims and answers to the charge and having filed claims only, the court entered a judgment of condemnation and forfeiture and permitted the product to be delivered to Carleton & Hovey Co. on payment of all the costs of the proceedings and the execution of a bond in the sum of $5,000.—[*Notice of Judgment No. 3906.*]

Consumption
4,500,000 people die every year from this terrible disease---Proved tests prove it is curable---Some rules to follow---Building up the system most important.
DISPUTABLE
PROOF

No longer is "Father John's Medicine" sold as a "consumption cure." The photographic reproduction above is from an advertisement that appeared in the New York *Sun* in 1909. The original occupied more than 180 square inches.

DR. SHOOP'S TWENTY MINUTE CROUP REMEDY

Dr. Shoop's Twenty Minute Croup Remedy was another of the galaxy of nostrums put out by the Dr. Shoop's Laboratories, Racine, Wis. The following claims appeared on the trade package:

"Dr. Shoop's Twenty Minute Croup Remedy Will usually check croup in Twenty Minutes."

"It will prevent Croup, if given where there is fever and symptoms of approaching Croup."

"Will usually check even desperate cases in 20 minutes."

These and similar claims the federal authorities naturally charged were false and fraudulent and applied knowingly and in wanton and reckless disregard of their truth or falsity. The federal chemists who analyzed the stuff reported that the "product is a sirup containing glycerin and a small amount of salicylic acid." The defendant pleaded guilty and was fined $100.—[*Notice of Judgment No. 3985.*]

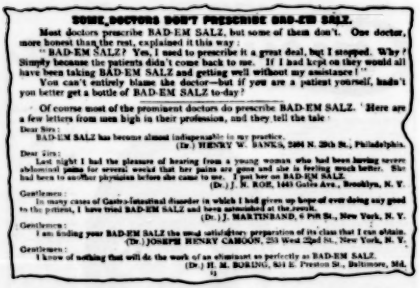
BAD-EM SALZ

"Bad-Em Salz," made by the American Laboratories, Philadelphia, was analyzed by the federal chemists, who reported that the preparation "consists of common salt, Glauber salt, baking soda, and a small amount of tartaric acid." The following statements appeared on the trade package:

"This Powder reproduces the medical properties of the great European Springs, famous for centuries for the cure of diseases of the stomach, intestines, liver, kidneys, or bladder."

"This Powder represents the medicinal agents obtained by evaporating the water from the famous European Springs."

These claims were declared false and misleading by the federal authorities because "in truth and in fact, said article



SOME DOCTORS DON'T PRESCRIBE BAD-EM SALZ.

Most doctors prescribe BAD-EM SALZ, but some of them don't. One doctor, more honest than the rest, explained it this way:

"BAD-EM SALZ? Yes, I used to prescribe it a great deal, but I stopped. Why? Simply because the patients didn't come back to me. If I had kept on they would all have been taking BAD-EM SALZ and getting well without my assistance!"

You can't entirely blame the doctor—but if you are a patient yourself, hadn't you better get a bottle of BAD-EM SALZ to-day?

Of course most of the prominent doctors do prescribe BAD-EM SALZ. Here are a few letters from men high in their profession, and they tell the tale:

Dear Sirs:
Last night I had the pleasure of hearing from a young woman who had been having severe abdominal pains for several weeks that her pains are gone and she is feeling much better. She had been to another physician before she came to me. I put her on BAD-EM SALZ.
(Dr.) J. R. ROE, 1461 Gates Ave., Brooklyn, N. Y.

Gentlemen:
In many cases of Gastro-Intestinal disorder in which I had given up hope of ever doing any good to the patient, I have tried BAD-EM SALZ and have astonished at the result.
(Dr.) J. MARTINBAND, 6 Pitt St., New York, N. Y.

Gentlemen:
I am finding your BAD-EM SALZ the most satisfactory preparation of its class that I can obtain.
(Dr.) JOSEPH HENRY CARSON, 253 West 42nd St., New York, N. Y.

Gentlemen:
I know of nothing that will do the work of an aluminant so perfectly as BAD-EM SALZ.
(Dr.) H. M. BURDINE, 814 E. Preston St., Baltimore, Md.

A specimen of the Bad-Em Salz advertising. The exploiters of this nostrum when charged with making fraudulent claims for their product attacked the constitutionality of the Food and Drugs Act!

did not reproduce the medical properties of the Great European Springs," etc.; and, furthermore, "was not composed of salts or substances derived from the waters of the springs at Ems, Germany, but was an artificial preparation consisting essentially of common salt, Glauber salts, baking soda and tartaric acid." In addition, the following therapeutic claims were made for the preparation:

". . . dissolves Gall Stones and Gravel in the kidneys or bladder."

"Gastritis . . . can be 'headed off' by a dose of Bad-Em Salz at bedtime and again the next morning."

"Diabetes . . . yields to diet and Bad-Em Salz."

These claims and various others of a similar nature were declared by the federal officials to be "false and fraudulent" and made "in reckless and wanton disregard of their truth or falsity." The American Laboratories, in its answer to the government's charges, declared that that part of the federal Food and Drugs Act—the Sherley Amendment—which prohibits false and fraudulent claims for curative effect was "contrary to the Constitution of the United States of America." The jury before whom the case was tried declared the company guilty on both counts: the first count, that charging the company with falsehood and with making misleading statements, and the second, charging the company with falsehood and fraud. After the verdict of guilty had been returned, the company made a motion in arrest of judgment and for a new trial. These motions were both denied by the court, and the company was fined $100.—[*Notice of Judgment No. 3962.*]

KENNEDY'S CAL-CURA SOLVENT

Dr. D. Kennedy's Cal-Cura Solvent was a cure-all put on the market by the Dr. David Kennedy Company, Rondout, N. Y. According to the government chemists the preparation was a watery, alcoholic, sweetened liquid containing 2.44 per cent. potassium acetate, 16.75 per cent. alcohol, 52.46 per cent. cane sugar and vegetable matter resembling mint, cardamom and boneset. Reading the claims made for this preparation one might get the impression that there could be few ills that it would not cure. To quote a few of them:

"Dissolves and eliminates lithic acid from the Blood; Gravel and Limestone formations from the Kidneys and Bladder; and Gallstones from the Liver."

"Cures Diabetes, Bright's Disease, Constipation of the Bowels, Dyspepsia and all diseases peculiar to women."

"Cures all Constitutional Diseases of the Blood; Scrofula, Cancer, and Canker Humors, Rheumatism and Rheumatic Pains of the Joints and Muscles."

". . . prevents appendicitis."

Naturally, the federal authorities declared that these claims and a number of others equally preposterous were "false and fraudulent" and were applied "knowingly and in reckless and wanton disregard of their truth or falsity." The company pleaded guilty and the court imposed a fine of $50.—[*Notice of Judgment No. 3770.*]

## Correspondence

### Bacteriologic Observations on Epidemic Poliomyelitis

*To the Editor:*—In reference to the article of Dr. George Mathers of Chicago on this subject (THE JOURNAL, Sept. 30, 1916, p. 1019), I beg to say that in the small epidemic of poliomyelitis which occurred in several of the western counties of Pennsylvania during the early autumn of 1907, a total of thirty-five cases of this disease were studied intensively, pathologically as well as clinically, and a report of these studies was published in the "Report of the Commissioner of Health" for the year 1907. In that study it was shown that a gram-positive diplococcus, such as the one mentioned by Dr. Mathers as having been found by him in eight cases of poliomyelitis in Chicago, was found in every one of the thirty-five cases studied by us in cultures made from the secretions from the noses and throats of these patients and in cultures of spinal fluid from four of these cases. A detailed account of the morphologic, biologic and biochemical characteristics of this gram-positive diplococcus appears on page 438 of the "Annual Report of the Commissioner of Health of Pennsylvania" for 1907.

So far as we were able to determine, this gram-positive micro-organism seemed to correspond with the coccus found by Geirsvold and by Harbitz and Scheel during the poliomyelitis epidemics in Norway and Sweden, some years before. As to pathogenicity, it was shown that on the introduction of 3 c.c. of a twenty-four-hour bouillon culture of the diplococcus into the peritoneal cavity of each of several guinea-pigs, no deleterious effects were observed. One c.c. of a twenty-four-hour bouillon culture inoculated subcutaneously at the root of the tail of a white mouse had no pathogenic effect.

A loopful of the culture of the gram-positive diplococcus, isolated from spinal fluid, was introduced high up into each naris of a monkey, with only negative result. Spinal fluid containing these diplococci was injected into a monkey's spinal canal on two different occasions without causing the least harm.

Two thirds of the surface growth of a twenty-four-hour agar culture of the gram-positive diplococcus isolated from the spinal fluid of Case 34 was emulsified in 2 c.c. sterile normal salt solution and injected into the spinal canal of a

monkey. On the next day his legs and tail showed a spastic, not a flaccid, paralysis. His temperature rose to 102.8 and afterward rapidly declined to normal. The paralysis disappeared two days later and the animal seemed to regain perfect health. His spinal fluid contained a very high percentage of polymorphonuclears and but few mononuclears or lymphocytes. Gram-positive diplococci were recovered from this spinal fluid in pure culture by incubation in bouillon.

This animal showed no symptoms of poliomyelitis, but rather those of an acute meningitis. At the monkey's sudden death, fourteen days after intraspinal injection of the culture of diplococci, the necropsy showed a violent hemorrhagic meningitis bearing no resemblance to poliomyelitis. Microscopic sections showed an intense polymorphonuclear infiltration with congestion involving the meninges of cord and brain and the superficial layers of the cortex. There was no round cell infiltration of the anterior horns of the gray matter of the cord.

As a result of these experiments, therefore, we concluded that the gram-positive diplococcus as found in these thirty-five cases of poliomyelitis had nothing to do with the disease.

In the epidemic of 1910, further opportunity was given to experiment with the gram-positive diplococcus. This organism was isolated from the nasal secretions of all of our cases and found in smears from portions of the brain and cord of these cases, as also in the smears and cords of all the monkeys dying of poliomyelitis. In three instances in which the spinal fluid from as many different cases was received at the laboratory, the diplococcus was found in the smears from the sediment and isolated in pure culture.

The details of these studies may be read in the "Annual Report of the Commissioner of Health of Pennsylvania" for 1910, and on p. 479 the following general statements were made:

"We are not able to produce poliomyelitis by inoculation into the brains of monkeys of a filtrate of plain bouillon and monkey blood bouillon cultures of the gram-positive diplococcus found in nearly all of our cases.

"In our attempts to produce paralysis in rabbits by inoculation of a suspension of a diplococcus in bouillon in one instance, in the case of Rabbit No. 81, we seem to have been successful, although the histological examination of the cord did not show typical lesions of poliomyelitis and we were unable to reproduce the disease in another rabbit by the inoculation of brain and cord of Rabbit No. 81 into his brain.

"Our conclusion as to the rôle the diplococcus plays in the causation of poliomyelitis is that it is not the principal etiological factor. It may be symbiotic in its relation to the essential factors and is probably essential in itself to the growth and development of the principal agent in the infection. We believe that it has something to do with the causation of the disease, in the light of our constantly finding it in all secretions and nervous tissues from cases of poliomyelitis."

SAMUEL G. DIXON, M.D., Harrisburg, Pa.
Commissioner of Health, Commonwealth of Pennsylvania.

### Destruction of Molds in Stock Solution by Copper Sulphate

*To the Editor:*—In hospitals and laboratories where 0.5 per cent. solution of acetic acid is used to make leukocyte counts, it will often be found that the stock solution will soon have growing in it a mold that forms macroscopic white flakes in the solution. Besides these large collections of fungi there are myriads of small ones that only the microscope can detect. These molds interfere with the proper spreading of the leukocytes over the counting chamber and often give rise to either erroneous counts or to guesswork on the part of the intern or technician doing the work. It seems that filtering the solution does not help, since the next day the solution is usually again filled with enough fungi to interfere with the count. I have found the following simple means to be effective in keeping the solution clean of these molds: A trace of copper sulphate in the solution does the work, and 1 grain of copper sulphate crystals in a liter (quart) of the solution is more than enough and does not interfere in any way with the leukocytes. Even rinsing the stock bottle with a 1 per cent. solution of copper sulphate will leave enough of the salt in the bottle when it is filled with the 0.5 per cent. acetic acid.

JOSEF SEILIN, M.D., Chicago.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### BUROW'S SOLUTION

*To the Editor:*—I am at sea regarding the proper preparation of Burow's solution, since reading your answer to my letter in Queries and Minor Notes, Sept. 30, 1916. I have been accustomed to direct my pharmacist to put up Burow's solution according to the National Formulary, whereas I find, as you say, that the new formulary has reverted to the old (?) method wherein lead acetate is used. Can you give me the reasons for this change other than the saving of time?

I contend that the peculiar advantage of Burow's solution lies in the continuous giving off for a longer time of fresh (nascent?) acetic acid. Without any carefully conducted experiment, I have observed that the solution prepared according to the previous method with aluminum sulphate, acetic acid and calcium carbonate apparently has this property of gradually releasing its acetic acid, whereas the lead acetate method, and in particular the solution of a previously prepared powder when put to use, gives off its acetic acid at once and in a short time is relatively odorless, just as one would expect of a simple solution of acetic acid in water.

I should esteem it a great favor if you would clear up this confusion for me. There must be many others in the same state as myself.

JOSEPH S. LEWIS, M.D., Buffalo.

ANSWER.—In 1857, according to O. Raubenheimer (*Proc. Am. Pharm. Assn.*, 1909, p. 1036), Dr. August Burow, professor of surgery at the University of Königsberg, prescribed a "solution of alum and a solution of sugar of lead to be mixed and then filtered after allowing the precipitate to subside." Burow used this original solution for the open antiseptic treatment of wounds. Subsequently, in the "Manual des New Yorker Deutsche Pharmazeutischer Vereins," published in 1858, the following appeared:

LIQUOR ALUMINIS ACETICI

| | | |
|---|---|---|
| R | Aluminis crudi | Partes decem |
| | Plumbi acetici | Partes septemdecim |
| | Gas hydrothionic | |
| | Aquae ana sufficientem quantitatem | |

The hydrogen sulphid was used to remove all the lead; enough water was added to make 48 parts. In later years one finds various modifications of this formula used, based on the same principle, but usually employing an excess of sulphate in order to insure the conversion of all the lead to the practically insoluble lead sulphate rather than removing lead as lead sulphid by means of hydrogen sulphid. A decided improvement was made by Eugene Dieterich (Dieterich Pharmaceutical Manual, Ed. 9, 1904, p. 265), in the substitution of aluminum sulphate for alum (potassium aluminum sulphate). This obviated the unnecessary presence of potassium sulphate, and made the solution less dense. Dieterich claimed that the lead sulphate would precipitate more completely when aluminum sulphate is used.

Unfortunately the name "Burow's solution" was often applied to any solution of an acetate of aluminum, such as "solution of aluminum acetate," "solution of aluminum subacetate," "solution of aluminum and sodium acetate," etc., using varying formulas; also the term aluminum acetate was frequently used for aluminum subacetate, as, for instance, in the third edition of the National Formulary. Hence much confusion resulted.

In view of this, Raubenheimer, in an address before the American Pharmaceutical Association in 1909, proposed that Burow's solution be described in the next edition of the National Formulary (now fourth edition) as "liquor alumini acetatis," made, according to special directions, by treating a solution of 150 gm. of lead acetate [$Pb(C_2H_3O_2)_2.3H_2O$] with a solution of 85 gm. of aluminum sulphate crystals [$Al_2(SO_4)_3.16H_2O$].

$$3Pb(C_2H_3O_2)_2 + Al_2(SO_4)_3 \rightarrow 2Al(C_2H_3O_2)_3 + 3PbSO_4$$

The precipitated lead sulphate is filtered off and the solution made up to 1,000 c.c. This is the formula now used.

The solution contains about 5 per cent. of neutral aluminum acetate:

$$Al(OOCCH_3)_3$$

The old solution of aluminum acetate (N. F. III) in reality was a solution of aluminum subacetate, as shown by G. C. Diekman (*Druggists' Circular*, 1908, p. 224). This is now properly described in the new edition of the National Formulary as "liquor alumini subacetatis," prepared according to the following equation:

$$Al_2(SO_4)_3 + 3CaCO_3 + 4HC_2H_3O_2 \rightarrow 2Al(OH)(C_2H_3O_2)_2 + 3CaSO_4 + 3CO_2 + 2H_2O$$

It contains about 8 per cent. of basic aluminum acetate:

$$Al(OH)(OOCCH_3)_2$$

As a precaution in preparing either of the foregoing solutions, one must bear in mind that the aluminum sulphate of the National Formulary, IV, contains 16 molecules of water of crystallization, whereas the aluminum sulphate of some foreign pharmacopeias, and much of the chemically pure product, contains 18 molecules. As would be expected, the normal or neutral aluminum acetate is more permanent than the basic. The basic often "gelatinizes" during the preparation.

We believe that our correspondent erred in his observations concerning the liberation of acetic acetate. The normal aluminum acetate would be hydrolyzed by water according to the equation:

$$Al(C_2H_3O_2)_3 + HOH \rightleftarrows Al(OH)(C_2H_3O_2)_2 + HC_2H_3O_2$$

If sufficient acetic acid is removed, the solution would contain the basic acetate. The basic acetate, however, is hydrolyzed, but less easily:

$$Al(OH)(C_2H_3O_2)_2 + HOH \rightleftarrows Al(OH)_2(C_2H_3O_2) + HC_2H_3O_2$$

On prolonged boiling, the dibasic acetate would be further hydrolyzed to $Al(OH)_3$. In this connection, it is well to point out that aluminum hydroxid is amphoteric, that is, it ionizes both as a base and an acid:

$$3H^+ + AlO^{\equiv} \rightleftarrows Al(OH)_3 \rightleftarrows Al^{+++} + 3OH^-$$

Although acetic acid is considered a weak acid, nevertheless, all of its salts of aluminum, when in solution, would be distinctly acid and, as would be seen, the neutral salt would liberate the greatest amount of acetic acid. The acetic acid thus liberated is not different in character or "nascent." It is quite likely the therapeutic action of the acetate of aluminum is due, to a certain extent, to the freed acetic acid, the concentration used (0.5 per cent.) being conducive to a high degree of hydrolysis; but it is also likely that its action is not due *entirely* to the acetic acid, but, in a large measure, to the aluminum ion.

### LIQUOR AMMONII ANISATUS—RECIPROCITY WITH NEW YORK

*To the Editor:*—Please advise me: 1. As to the origin and uses of liquor ammonii anisatus; 2. What states reciprocate with New York.

W. FRANKLIN WOOD, M.D., Boston.

ANSWER.—1. Liquor ammonii anisatus is an old preparation with somewhat obscure origin. It is described in several of the foreign pharmacopeias, although the proportions of the several ingredients differ slightly in the various books. The following is a typical formula:

| | |
|---|---|
| Oil of anise | 3 |
| Alcohol | 77 |
| Ammonia water | 20 |

The dose is from 1 to 4 c.c. (15 to 60 minims). It has been used as a carminative and mild nervous sedative, but is rarely prescribed in this country.

2. Delaware, Indiana, New Jersey, Ohio, Utah, Virginia and Wisconsin.

### SANITARY PAPER MILK BOTTLES—ADDRESS OF MANUFACTURERS WANTED

A correspondent desires the name and address of firms making sanitary paper milk bottles, which are being recommended by many health officers as a substitute for the present glass containers for the retail distribution of milk. We believe there are several firms manufacturing such bottles, and should be glad to have their addresses.

**Death an Alleviation.**—It is by no means a fact, that death is the worst of all evils; when it comes, it is an alleviation to mortals who are worn out with suffering.—Metastasio.

## Medical Education and State Boards of Registration

### COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, Nov. 14. Sec., Dr. T. J. Stout, Brinkley; Homeopathic, Little Rock, Nov. 13. Sec., Dr. Scott C. Runnels, 900 Scott St., Little Rock; Eclectic, Little Rock, Nov. 14. Sec., Dr. C. E. Laws, 712 Garrison Ave., Fort Smith.

CONNECTICUT: Regular, New Haven, Nov. 14-15. Sec., Charles A. Tuttle, 196 York St., New Haven; Homeopathic, New Haven, Nov. 14-15. Sec., Dr. E. C. M. Hall, 82 Grand Ave., New Haven; Eclectic, New Haven, Nov. 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

DELAWARE: Dover and Wilmington, Dec. 12-14. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Regular, Palatka, Dec. 5-6. Sec., Dr. E. W. Warren, Palatka; Homeopathic, Jacksonville, Nov. 10. Sec., Dr. J. B. Griffin, St. Augustine.

KENTUCKY: Lonisville, Dec. 12-14. Sec., Dr. A. T. McCormack, Bowling Green.

LOUISIANA: New Orleans, Nov. 30-Dec. 2. Sec., Dr. E. L. Leckert, 716 Macheca Bldg., New Orleans.

MAINE: Portland, Nov. 14-15. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MARYLAND: Regular, Baltimore, Dec. 12. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.

MASSACHUSETTS: Boston, Nov. 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

MISSOURI: St. Louis, Dec. 11-13. Sec., Dr. J. A. B. Adcock, Jefferson City.

NEBRASKA: Lincoln, Nov. 8-9. Sec., Dr. E. Arthur Carr, Lincoln.

NEVADA: Carson City, Nov. 6. Sec., Dr. S. L. Lee, Carson City.

OHIO: Columbus, Dec. 5-7. Sec., Dr. George H. Matson, State House, Columbus.

RHODE ISLAND: Providence, Nov. 15-16. Sec., Dr. Gardner S. Swarts, 70 Waterman St., Providence.

SOUTH CAROLINA: Columbia, Nov. 14. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TEXAS: Fort Worth, Nov. 14-16. Sec., Dr. J. S. McCelvey, Temple State Bank Bldg., Temple.

VIRGINIA: Richmond, Dec. 15-18. Sec., Dr. J. N. Barney, Fredericksburg.

WEST VIRGINIA: Parkersburg, Nov. 14. Sec., Dr. S. L. Jepson, State Health Commissioner, Charleston.

### California June Report

Dr. C. B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports the oral and written examination held at San Francisco, June 26-30, 1916. The total number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 125, of whom 115 passed, including 11 osteopaths, and 10 failed, including 6 osteopaths. Thirty-eight candidates were licensed through reciprocity. Two osteopaths were licensed through reciprocity. Twelve candidates were granted drugless practitioner's license and 4 chiropodist's license. The following colleges were represented:

| College | Year Grad. | Per Cent. |
|---|---|---|
| **PASSED** | | |
| College of Medical Evangelists (1915) 81.7, 89.1; (1916) 86, 86.5, 89.2, 89.9, 90.9. | | |
| Coll. of Phys. and Surgs., Los Angeles (1916) 80.7, 81, 81.3, 84.8, 85.7, 86.1, 86.7, 87, 89.1, 91.5, 91.9, 92, 92.2, 93.8. | | |
| Coll. of Phys. and Surgs., San Francisco (1905) 87.2; (1915) 78.4, 84; (1916) 80, 82.1, 84.5. | | |
| Hahnemann Med. Coll. of the Pacific (1915) 88.9; (1916) 78.1, 80.9, 81.9, 82.4, 82.7, 84.4, 84.7, 88.1, 88.9. | | |
| Leland Stanford Junior University (1915) 88.2; (1916) 78.1, 81.2, 83.4, 83.5, 84, 84.1, 84.9, 85.2, 86, 86.3, 86.8, 88.2, 88.5, 90.3, 90.8, 91.2, 93, 93.4, 94.9, 95.5. | | |
| University of California (1903) 75; (1916) 83, 86, 86.1, 86.1, 86.2, 86.5, 86.7, 87.2, 88.4, 88.7, 88.8, 89, 89.1, 89.9, 90.3, 90.5, 91.1, 91.1, 91.1, 91.5, 91.8, 91.9, 92, 92, 92.5, 93.1, 93.6, 93.9, 95.4. | | |
| Oakland College of Med. and Surg. | (1916) 88.3, | 94.7 |
| Hahnemann Med. Coll. and Hosp., Chicago | (1916) | 88.9 |
| Rush Med. College | (1915) | 91.8 |
| Johns Hopkins University | (1905) 89.4; (1911) 87; (1914) | 85.8 |
| Boston University | (1914) | 81.7 |
| Harvard University | (1913) | 92.2 |
| St. Louis University | (1904) | 76.8 |
| Jefferson Medical College | (1915) 84.2, | 86.1 |
| University of Pennsylvania | (1915) 89.7; (1916) | 84.5 |
| Vanderbilt University | (1915) | 81.3 |
| McGill University | (1912) | 75 |
| Univ. of Central Spain, Madrid | (1903) | 87 |
| **FAILED** | | |
| College of Phys. and Surgs., San Francisco | (1914) | 72.2 |
| John A. Creighton Medical College | (1913) | 67.8 |
| School of Med. and Pharmacy of Jalisco, Guadalajara | (1901) | 63.8 |
| Imperial University, Kyoto | (1910) | 67.4 |

| College | Year Grad. | Reciprocity with |
|---|---|---|
| **LICENSED THROUGH RECIPROCITY** | | |
| Denver and Gross Coll. of Med. | (1907) | Washington |
| American Med. Missionary Coll., Chicago | (1909) | Michigan |
| Bennett Coll. of Eclectic Med. and Surg. | (1898) | Illinois |

| | | |
|---|---|---|
| Chicago College of Med. and Surg. | (1914) | Illinois |
| Chicago Homeopathic Med. College | (1886) | Ohio |
| College of Phys. and Surgs., Chicago | (1901) | Illinois |
| Hahnemann Med. Coll. and Hosp., Chicago | (1890) | Nebraska |
| Rush Medical College | (1902) | Washington |
| University of Illinois | (1905) | Illinois |
| Central Coll. of Phys. and Surgs. | (1896) | Indiana |
| Indiana University | (1911) | Indiana |
| Sioux City College of Medicine | (1907) | Iowa |
| Keatucky School of Medicine | (1889) | Texas |
| University of Louisville | (1908) | Georgia |
| Tulane University of Louisiana | (1895) | Washington |
| Baltimore Medical College | (1911) | Oregon |
| Johns Hopkins University | (1912) | Maryland |
| University of Maryland | (1907) Ohio; (1908) | N. Carolina |
| University of Michigan Medical School | (1909) | Ohio |
| University of Minnesota | (1901) | Minnesota |
| Columbian Med. Coll., Kansas City | (1899) | P. I. |
| Kansas City Medical College | (1904) | Kansas |
| St. Louis Medical College | (1878) | Missouri |
| St. Louis University | (1906) | Missouri |
| Washington University | (1912) | Missouri |
| Albany Medical College | (1906) New York; (1914) | Mass. |
| Eclectic Medical Coll., Cincinnati | (1901) | Ohio |
| Medical College of Ohio | (1882) Ohio; (1903) | Montana |
| University of Cincinnati | (1911) | Nevada |
| Jefferson Medical College | (1904) | Penna. |
| University of Pennsylvania | (1892) | Arizona |
| University of Pittsburgh | (1909) | Penna. |
| University of the South | (1904) | Penna. |
| University of Toronto | (1911) | New York |
| Imperial University, Tokyo | (1899) | Washington |

### Kansas June Report

Dr. H. A. Dykes, secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, June 13-14, 1916. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 20, all of whom passed. Thirty-nine candidates were licensed through reciprocity. The following colleges were represented:

| PASSED | | Year Grad. | Per Cent. |
|---|---|---|---|
| College of Physicians and Surgeons, Chicago | | (1912) | 79.9 |
| University of Kansas | (1916) 81.7, 82, 82.5, 83.5, 83.7, 84.2, 84.6, 85.1, 85.3, 87.7, 89.5 | | |
| Tulane University of Louisiana | | (1916) | 85.6 |
| Harvard University | | (1914) | 88.4 |
| National University of Arts and Sciences | | (1916) | 88.3 |
| Southwest School of Med. and Hosp. | (1916) 76.3, 77.8, 79.7, 79.7, 81.7 | | |

| LICENSED THROUGH RECIPROCITY | | Year Grad. | Reciprocity with |
|---|---|---|---|
| Northwestern University | (1892) Oklahoma; | (1914) | Illinois |
| College of Physicians and Surgeons, Chicago | | (1912) | Illinois |
| University of Illinois | (1913) Oklahoma; | (1915) | Missouri |
| Hospital College of Medicine, Louisville | | (1906) | Kentucky |
| Kentucky School of Medicine | | (1882) | Kentucky |
| Louisville National Medical College | | | Kentucky |
| University of Louisville | (1896) Missouri; | (1907) | Tennessee; (1914) (1915) Kentucky |
| Johns Hopkins University | | (1910) | Missouri |
| Boston University | | (1900) | New Jersey |
| Eclectic Med. Univ., Kansas City | (1906) (1911) | | Arkansas |
| Ensworth Medical College | | (1894) | Missouri |
| Kansas City College of Med. and Surg. | | (1916, 9) | Arkansas |
| Kansas City Hahnemann Med. Coll. | (1910) Missouri; | (1912) | Arkansas |
| National Univ. of Arts and Sciences. | (1913) (1914) | (1915) | Missouri |
| St. Louis University | | (1905) | Illinois |
| University Med. Coll., Kansas City | (1911) Missouri; | (1913) | Oklahoma |
| Omaha University | | (1896) | Nebraska |
| Western Reserve University | | (1915) | Ohio |
| Jefferson Medical College | | (1915) | Missouri |
| University of Pennsylvania | | (1903) | Penna. |

### New Hampshire June Report

Dr. W. T. Crosby, secretary of the New Hampshire State Board of Medical Examiners, reports the oral and written examination held at Concord, June 26-28, 1916. The total number of subjects examined in was 12; total number of questions asked, 60; percentage required to pass, 75. The total number of candidates examined was 7, of whom 5 passed and 2 osteopaths failed. Three candidates were granted reregistration licenses. Eleven candidates were licensed through reciprocity. The following colleges were represented:

| PASSED | | Year Grad. | Per Cent. |
|---|---|---|---|
| Boston University | | (1915) | 83 |
| Tufts College Medical School | (1914) 85; | (1916) | 79, 81 |
| Harvard University | | (1898) | 93 |

| LICENSED THROUGH RECIPROCITY | | Year Grad. | Reciprocity with |
|---|---|---|---|
| Johns Hopkins University | | (1915) | Maryland |
| University of Maryland | | (1883) | Mass. |
| Harvard University | (1885) | (1911) | Mass. |
| Tufts College Medical School. | (1903) (1912) (1913) | (1915) | Mass. |
| Dartmouth Medical School | | (1905) | Mass. |
| Fordham University | | (1915) | New York |
| McGill University | | (1888) | Mass. |

## Book Notices

SKIN CANCER. By Henry H. Hazen, A.B., M.D., Professor of Dermatology in the Medical Department of Georgetown University. Cloth. Price, $4. Pp. 251, with 98 illustrations. St. Louis: C. V. Mosby Company, 1916.

The larger part of this book is devoted to a description of the various tumors of the skin. In this Dr. Hazen has not confined himself strictly to malignant growths, but has considered in addition not only precancerous growths of the skin, but also numerous cutaneous tumors which are in no sense related to malignant growths, such as benign epithelial proliferations, and many benign connective tissue tumors—keloid, fibroma, neuroma, myoma, lipoma, etc.—lesions which have only the most remote relationship to malignant tumors. While these inclusions increase the usefulness of the book in some ways, they detract from it as discursive and not germane to its purpose. It is noted with surprise that the author considers sarcoid with sarcoma. This is particularly to be regretted, because it tends to increase the already existing confusion produced by the unhappy name sarcoid. Further, there is no reason to consider it with sarcoma, or, indeed, in a book on cancer of the skin. Sarcoid is neither a tumor nor a cancer, and it is not related to sarcoma. The descriptions of the symptoms and causes of malignant growths of the skin are adequate and clear. The last few chapters in the book are devoted to differential diagnosis, prognosis, prophylaxis and treatment. These chapters are all good. In the chapter on treatment, the various methods of treating cutaneous cancers are fully considered, and the attitude is conservative. The book is a useful summary of our knowledge of cutaneous cancer, and will be found valuable for reading or for reference. Some of the author's views, such as his belief in the infectiousness of cancer, are not conclusively established. The book is well printed, but many of the illustrations are poorly reproduced. This applies especially to the photomicrographs, many of which are so ill defined as to be valueless.

A MANUAL OF PRACTICAL LABORATORY DIAGNOSIS. By Lewis Webb Hill, M.D., Graduate Assistant, Children's Hospital, Boston. Cloth. Price, $1.50. Pp. 179, with illustrations. Boston: W. M. Leonard, 1916.

The author states that it has been his aim to include the information which an everyday practitioner wants, but to weed out carefully all tests and methods which are not of ordinary clinical application, or which require for their performance complicated apparatus and trained technicians. He has succeeded admirably in giving us a book which offers to students and house officers the technic for the necessary routine of daily laboratory practice. Theoretical considerations are not introduced to confuse the worker, thus adding to the practical working value of the book. The tests given are those which are well recognized and established. The more technical and elaborate tests are eliminated, as they are not ordinarily performed by those for whom the book is intended. The style is clear, and the illustrations are adequate.

CLINICAL DISORDERS OF THE HEART BEAT. A Handbook for Practitioners and Students. By Thomas Lewis, M.D., D.Sc., F.R.C.P., Assistant Physician, University College Hospital, London. Third Edition. Cloth. Price, $2 net. Pp. 116, with 54 illustrations. New York: Paul B. Hoeber, 1916.

This is practically a reprint of the first edition of 1911. There are some slight changes in the text, however, and the statistical tables show different figures as they embody the author's experience of the last five years. The real addition is the chapter of eleven pages on auricular flutter. The favorable comments elicited by the other editions need not be here repeated. The practitioner or student who desires to understand cardiac irregularities according to modern conceptions will find nowhere else within the same number of pages such a clear and succinct exposition. It is to be understood that in this book Lewis discusses the irregularities as studied without the aid of the polygraph or electrocardiograph.

# Social Medicine, Medical Economics and Miscellany

## THE INVERACITIES OF ANTIVIVISECTION*

W. W. KEEN, M.D., LL.D.
Emeritus Professor of Surgery, Jefferson Medical College
PHILADELPHIA

In my book on "Animal Experimentation and Medical Progress" I wrote as follows:

I HAVE BEEN COMPELLED TO CONCLUDE THAT IT IS NOT SAFE TO ACCEPT ANY STATEMENT WHICH APPEARS IN ANTIVIVISECTION LITERATURE AS TRUE, AND ANY QUOTATION OR TRANSLATION AS CORRECT, UNTIL I HAVE COMPARED THEM WITH THE ORIGINALS AND VERIFIED THEIR ACCURACY FOR MYSELF.

It seems to be curiously impossible for the antivivisectionists to make straightforward, accurate statements of fact, or even accurate quotations. As to the latter, I have shown in my book very many misquotations, mistranslations, omissions, and even interpolations not in the originals.

Two recent instances and a third of a somewhat older date, corroborating my statement, occur in two antivivisection journals, the *Open Door*, p. 5 of the issue for April, 1916, and the *Journal of Zoöphily* for May, 1916, p. 74, and the Philadelphia *Public Ledger* of Dec. 19, 1913.

Dr. Wile of the University of Michigan made a small trephine opening in the skulls of six persons who had become insane as a result of paresis. The syphilitic nature of this disease, which is a frequent cause of insanity, has been long suspected and partly proved. Wile removed a very small portion of the human brain tissue from these patients and injected it into rabbits. The result of this injection proved conclusively that the brain tissue in these cases was full of the active germs of syphilis and that syphilis is the cause of the paresis.

These investigations, however, in my opinion, were wholly unjustifiable. This opinion, too, I know is shared by others who, like myself, are warm advocates of research by animal experimentation. The very fact that we can obtain information of the greatest value to animals and human beings alike by experiments on animals (which are almost identical with human beings both in structure and function) is the strongest reason why we should utilize animals instead of human beings. Hence I wish to register here my condemnation of Dr. Wile's experiments and a protest against any similar experiments in the future.

The article in the *Open Door* has this title:

VIVISECTION OF THE HUMAN BRAIN
BY UDO J. WILE, M.D., UNIV. OF MICHIGAN
(Excerpts from *Jour. Experimental Medicine*, Rockefeller Institute, Feb. 1, 1916)

The first paragraph of this article is in quotation marks and reads thus:

"THE AIM OF SCIENCE IS THE DISCOVERY OF A NEW FACT AT ANY SACRIFICE OF LIFE. . . . I DO NOT KNOW ANY HIGHER USE WE CAN PUT A MAN TO.—PROFESSOR SLOSSON."

Then follow a number of "excerpts" from Dr. Wile's paper, also in quotation marks, with running commentaries.

Any incautious reader would think that Professor Slosson was a red-handed vivisectionist, and also that the quotation from Professor Slosson was a part of Dr. Wile's paper—a sort of motto expressing Wile's own sentiments. Not a word of this quotation from Professor Slosson appears in Dr. Wile's original paper. It is thrust into the text to catch the eye and mislead the reader. Professor Slosson's communications appear in the *Independent* for Dec. 12, 1895, p. 1679, and Feb. 13, 1896, p. 207.

As I suspected, the quotation does not reproduce (as a quotation always should) the *ipsissima verba* of the author. It should read:

THE AIM OF SCIENCE IS THE ADVANCEMENT OF HUMAN KNOWLEDGE AT ANY SACRIFICE OF HUMAN LIFE. . . . WE [NOT "I"] DO NOT KNOW OF ANY HIGHER USE WE CAN PUT A MAN TO.

But while changing the wording of an excerpt as in this case is blameworthy, a far more important sin is an inexcusable but evident intention to make a wrong impression on the mind of the reader by this isolated, unqualified quotation. In his paper, Professor Slosson was urging young men to devote a lifetime of labor to the advancement of knowledge as the highest of human callings. It was an appeal for a life of self-sacrifice and devotion to scholarship even at the cost of *their own* lives. Among the fields of research he specified physics, mathematics, geography and pathology, sciences in which vivisection is never employed. He expressly disclaimed (p. 208) any reference to the sacrifice of other people. Could anything be clearer than the following additional quotation which I take from Professor Slosson's paper?

IF HE [THE INVESTIGATOR] SUCCEEDS . . . HIS VERY NAME IS SOON DROPPED FROM THE PARAGRAPH HE HAS ADDED TO THE WORLD'S KNOWLEDGE. THIS IS AS IT SHOULD BE . . . IT IS FITTING THAT HIS NAME SHOULD BE FORGOTTEN WHILE THE TRUTH FOR WHICH *HE* GAVE *HIS LIFE* SHALL LIVE FOREVER.

Viewed in this new light, and recalling the many martyrs of science, who would not say that Professor Slosson was absolutely right? Such juggling with words, even though the very words of the author, should receive the sternest reproof.

At the time when he wrote the article from which the quotation is taken, Professor Slosson was professor of chemistry in the University of Wyoming. He had never done then, nor has he ever done since, any experiments on animals. Yet quoted apart from the text and without the explanation I have just given, readers of the article in the *Open Door* would inevitably think that he was an ardent advocate even of human vivisection.

Later in his paper, Professor Slosson considers vivisection; but again the sacrifice of human life to which he alludes is the lives of the experimenters themselves.

While condemning Dr. Wile, I wish, however, to be just to him. Dr. Wile used every precaution known to science—careful disinfection, an efficient anesthetic, great care in selecting a location where no harm would be done to the brain functions; and the prompt recovery of all the patients showed that his precautions were efficacious. It may be objected that Wile used no anesthetic in the brain itself. This was wholly unnecessary as the brain has *no feeling whatever*. I well remember a case thirteen years ago—a terrible crush of the top of the skull with loss of much bone and brain substance. Three days after the accident, when I was slicing and even scraping away some of the protruding brain substance, the patient, fully conscious (as there was no need for an anesthetic) suffered not the least pain, but shook with laughter when I told him "he had too much brains" and I was scraping some of them away. I saw him within a year in perfect condition physically and mentally.

As Dr. Wile did not state in his article whether the patients lived or died, I inquired as to the results. Dr. Victor C. Vaughan, dean of the University Medical School, in which Dr. Wile works, assures me that *not one* of the patients suffered any ill effects.

Only of late has syphilis been definitely recognized as the principal cause of paresis, which blights not only the body but so often eventually destroys the mind. Remedies—even salvarsan—which may be efficient in curing syphilitic affections in other parts of the body do not reach the germs in the brain. These are peculiarly virulent. As a result of Dr. Wile's researches it may hereafter become possible in the early stages of the disease to kill these germs even in their remotest stronghold. We may then be able to combat this dreadful affliction and restore both the bodies and the minds of these unfortunates.

Another misrepresentation of Wile's investigation appears in the *Journal of Zoöphily*. It says, "A long-nozzled syringe was inserted . . . and a *syringeful* of brain contents was extracted." Dr. Wile's paper distinctly states that "a small cylinder of gray and white matter with some fluid from the

* See The Right and Wrong of Making Experiments on Human Beings, editorial, this issue, p. 1372.

ventricle was removed." No "syringeful" was removed, but only a "small cylinder" like part of a pin.

The sneer of the *Journal of Zoöphily* that Dr. Wile "used apparently only a local anesthetic" shows either ignorance or wilful misrepresentation. Many hundreds—or rather thousands—of operations have already been done on human beings by "only a local anesthetic" without pain. It is a surgical method of anesthesia as well recognized as that by ether or chloroform, and has largely supplanted other anesthetics in certain operations, because of obvious surgical advantages.

The *Journal of Zoöphily* is the last paper which should urge any objection to "human vivisection," for its late editor-in-chief, Mrs. Caroline Earle White, was an avowed advocate of "human vivisection."

Replying to an address of my own in which I asserted that experiments "must not be tested first upon man" she asserted, "on the contrary that in the majority of cases they *must* be tested *first* upon man, or not tested at all." Now if no new method nor any new drug had ever been tried, either on animals or man, it is evident that we should today be still practicing the medicine and surgery of the middle ages.

Still further, Mrs. White opposed my plea for attempting by experiments on animals to discover an antidote to snake venom which in India kills over 20,000 human beings every year. She actually proposed that "the experimenters go to India where they could find as large a field . . . as they require in the *poor victims themselves*. Here is an opportunity such as is not often offered for *experimenting on human beings*, since as they would invariably die from snake bite there can be no *objection to trying upon them every variety of antidote that can be discovered*." This, she declared, "is the one case in which they could be observed with so *much satisfaction and certainty upon man*" [all italics my own]. Could there be a more cruel—and as elsewhere I also have shown—a more absurd proposal?

But New York and Philadelphia must not claim superiority in misstatements over Boston. In the Philadelphia *Public Ledger* of Dec. 19, 1913, Mrs. Jessica L. C. Henderson, a resident of a suburb of Boston, and a vice president of the American Antivivisection Society, said:

> WE EAGERLY OFFER OUR CITATIONS IN THE HOPE THAT THE PUBLIC WILL TAKE THE TROUBLE TO VERIFY THEM. DOCTOR CRILE'S BOOK, FROM WHICH THE ANTIVIVISECTIONISTS QUOTED ACCURATELY, REPEATEDLY DESCRIBES EXPERIMENTS FOLLOWED BY THE WORDS "NO ANESTHESIA." THE BOOK HAS BEEN WITHDRAWN FROM PUBLIC SALE.

I at once challenged both statements. As to the latter statement the book has never been "withdrawn." No more copies were for sale (except possibly second-hand) simply because the entire edition had been "sold out," the publishers inform me.

As to the first charge, I asked Mrs. Henderson to give me the pages on which the words "no anesthesia" "repeatedly" occurred. She assured me in reply "that at the first opportunity I shall vindicate my reputation." Then began a series of excuses and subterfuges. "The days and the hours are all too few." Next it is her "firm conviction that the edition has been recalled and another issued" in which these culprit words were omitted. This was disproved by the statement to me by the publishers (J. B. Lippincott Company), which I communicated to her, that only one edition of Crile's book on "Shock" had ever been printed. She said also that she had advertised for a copy and when she obtained it she would "at once comply with your [my] request for the page numbers." Thereupon I sent her my own copy, asking her to return it with the pages indicated. After a long interval it was returned, but without any marked pages.

Next she claimed that she had not indicated which book by Dr. Crile was the one in which these words appeared! To this I replied that I had all of Dr. Crile's books and if she would indicate which was the guilty one I would send it to her at once. This offer was never accepted. As a matter of fact, in her letter to the *Public Ledger* she *did* indicate which book it was, for she described it as the one "from which the antivivisectionists quoted accurately." These quotations I have compared with Dr. Crile's book on shock and found that they *were* taken from his book on shock, and for a wonder they were accurately quoted. I have "repeatedly" reminded Mrs. Henderson that I am "eagerly" awaiting her "vindication" by giving me the pages, but a long period of eloquent silence has followed. I despair of ever receiving them. A good reason exists—there are no such pages.

Why should she not follow the example of her illustrious co-worker, the late Mrs. White? The latter had stated that certain experiments were done on "between forty and fifty children" and that every one of them died. When the fact was pointed out to her that "lumbar puncture" (now an everyday and often indispensable means of diagnosis) was done on only twenty-seven living children of whom only fourteen died (not one of whom died from the lumbar puncture, but from the various diseases of which they were the victims), she promptly and publicly acknowledged her error. Mrs. Henderson owes it to Dr. Crile, but above all to herself, to acknowledge that her statement was incorrect and to offer an apology to Dr. Crile. Had Mrs. Henderson's charge been private, my reply would have been also private; but her charge was specific and public, and made in a very widely circulated and responsible newspaper; hence my public reply.

But what can one expect from persons who heartlessly call the recent terrible epidemic of infantile paralysis as "the Summer's Foolish Panic" and "the New York Infantile Paralysis Epidemic a Fake" and commend the treatment by the Chinese who "divide the human body into twelve sections all connected by interlacing nerves," each section being "rooted in some vital organ"! (*Open Door*, October, 1916.)

1729 Chestnut Street.

## Medicolegal

### Care Required to Prevent Escape of Patients from Private Institutions

(*Torrey vs. Riverside Sanitarium* (Wis.), *157 N. W. R. 552*)

The Supreme Court of Wisconsin affirms a judgment for the defendant, which was sued for damages for personal injuries alleged to have been caused the plaintiff by shock and fright from a partly clad patient coming to her home and demanding the use of the telephone and asking for some clothes. Two days before the patient had voluntarily come to the sanatorium accompanied by a male relative. His physician had previously informed the superintendent that he seemed to be in a confused state of mind and had had certain obsessions for a couple of days, and wanted him kept under observation to see whether his mental condition was a mere brain trouble, or the result of some acute disease like typhoid fever coming on. The second night the patient got up, dressed, and left the institution without permission or the knowledge of the night nurse. He returned in the morning. To prevent any recurrence like that, he was told that it was desired to transfer him to another department, to which he said, "All right." He got out of bed, and with his underclothes on and a blanket thrown over him was conducted by a bath attendant from his room up a stairway toward the men's hall. He seemed to go with perfect willingness. The superintendent followed them along the corridor to the foot of the stairway, and then proceeded toward his office. The patient and attendant walked side by side up stairs, when he suddenly threw off the blanket, of which the attendant had hold, and, pursued by the attendant, made his escape, running across the fields until he came to the plaintiff's dwelling house as stated above. The jury found that the defendant did not exercise ordinary care while transferring the patient; that such want of ordinary care was the proximate cause of her injury; and that the sum which would reasonably compensate her for her injuries was $1,000. On motion, the trial court changed the answer as to the failure to exercise ordinary care, and rendered judgment for the defendant, which is affirmed by the supreme court. The latter says that doubtless it is incumbent on the defendant and its employees at all times during the treatment of nervous and insane patients

to use such means to restrain and guard them as would seem reasonably sufficient to an ordinarily prudent man under like circumstances to prevent such an occurrence as took place here, and for breach of that duty liability will arise, if such breach proximately causes injury to another. The trial court held that the evidence would not justify a finding of breach of that duty in this case, and the supreme court cannot say that this conclusion was wrong. It is to be remembered that the patient in question never exhibited symptoms of violence; that he came to the institution voluntarily, and was apparently normal, and entirely tractable; that at the time of his escape there was a male attendant at his side; that an attempt to place greater restrictions on his liberty might easily have resulted in exciting the patient and producing serious results; and, further, that the defendant is a private institution receiving voluntary patients, and not a public institution receiving patients on legal commitment. There are probably no questions more delicate than the questions arising as to the proper care of such patients. Humanity demands that they be treated and cared for somewhere, but it cannot demand omniscience in that treatment. The same measures may produce the best results in some cases and the worst in others. The evidence impresses the supreme court with the belief that the defendant's employees were performing an exceedingly difficult task with all the care and caution which ordinarily prudent persons in their situation would deem it necessary to exercise.

### Right of Selecting Physician

*(Pecott vs. American Mut. Liability Ins. Co. et al. (Mass.), 112 N. E. R. 217)*

The Supreme Judicial Court of Massachusetts reverses a decree which confirmed an award of $50 in favor of the plaintiff, who sought compensation under the workmen's compensation act. The plaintiff was injured in a mill in which he was employed, near noon when the mill closed. In the afternoon the pain from the injury became intense and he consulted a physician, who advised an operation, and performed one for hernia on the following Wednesday. At the time the plaintiff was injured there were posted in the mill printed notices informing employees that in case of injury one of two other physicians named was to be called; "bills of other physicians will not be paid by the insurance company." The court says that, under the workmen's compensation act, the reasonable medical services required during the first two weeks after the injury are to be furnished by the insurer; the duty of supplying medical aid being imposed on the insurance company, with the obligation of paying therefor. The right to select the attending physician is given to it by the statute. It is evident that the legislature, in passing this act, did not intend to give the employee the privilege or right of selecting his own physician at the expense of the insurer. Under the amendment of 1914, where a physician other than the one provided is called in case of an emergency, or for other justifiable cause, the insurer is required to pay for this service, if in the opinion of the industrial accident board the charge is reasonable and the cause of employment justifiable. The purpose of the legislature in passing this amendment was not to deprive the insurer of the right to select its own physicians. By this change in the law, provision was made for the case of emergency, where there was imminent danger, where the suffering and pain were severe, where immediate attention was required and the services of the insurance physician could not be obtained in time to give relief. The amendment was also intended to apply to a situation where there was no actual emergency, but where the employee, acting as a reasonable man, would be justified in refusing the care of the physician selected by the company. In this case there was no evidence which justified the plaintiff under the statute in neglecting to secure the services of either of the physicians named in the notices. He could read and speak English; the notices were conspicuously posted, and the court thinks he was charged with knowledge of them and their contents. His ignorance of his rights under the workmen's compensation act could not excuse him from compliance with its terms.

## Society Proceedings

### COMING MEETINGS

American Academy of Ophthal. and Oto-Laryn., Memphis, Dec. 11-13.
American Association of Anatomists, New York, Dec. 27-29.
Medical Association of the Isthmian Canal Zone, Ancon, Dec. 16.
Society of American Bacteriologists, New Haven, Conn., Dec. 26.
Southern Medical Association, Atlanta, Nov. 13-16.
South. Surg. and Gynec. Assn., White Sulphur Spgs., W. Va., Dec. 11-13.
Western Surgical Association, St. Paul, Dec. 15-16.

### AMERICAN ROENTGEN-RAY SOCIETY

*Seventeenth Annual Meeting, held at Chicago, Sept. 27-30, 1916*

The President, DR. A. W. CRANE, Kalamazoo, Mich., in the Chair

### SYMPOSIUM ON ROENTGEN THERAPY

#### Roentgen Therapy of Skin Affections

DR. H. W. DACHTLER, Toledo, Ohio: In 530 cases occurring on the face and lips, treated during the past seventeen years, in which the history is complete, excluding carcinoma involving the neck, clinically 62 per cent. were diagnosed as malignant. Of sixteen cases involving the forehead, there was but one failure; chin, 8 cases, all cured; neck, 7 cases, all cured; upper lip, 18 cases, 16 cured; nose, 110 cases, 102 cured; cheek, 95 cases, 81 cured; external ear, 25 cases, 20 cured; eyelids, 145 cases, 134 cured; lower lip, 57 cases, 52 cured. Three patients with erythematous lupus were not benefited by the treatment. Seven cases of lupus gave discouraging results, three patients being cured. Of eleven patients with keloid, all were so much improved as to be classed as cured. The end-results in this series compare more than favorably with the results obtained by other methods covering a like period of time.

#### Roentgen Therapy of Tuberculous Peritonitis

DR. PAUL EISEN, Chicago: Of eleven cases of tuberculous peritonitis treated with deep therapy, operation was performed in seven before the treatment was instituted, thus verifying the diagnosis beyond any doubt; the other four were diagnosed from clinical symptoms, including roentgenographic findings. Of the seven patients operated on before treatment, four have been entirely cured and one still under treatment is getting well. Of the remaining four patients not operated on, in whose cases the diagnosis was based on clinical symptoms alone, two are still under treatment and improving, one was well after six months' treatment and the fourth discontinued treatment after two weeks. In all but two cases there was a steady increase in weight. The amount of rays given was different in each case. I judge the dose to be employed by the gain in weight, a steady gain of 1 pound a week being desired and often more attained. The accumulation or disappearance of free fluid must be taken into consideration in cases in which it is present. In the one unsuccessful case I also added ultraviolet rays to the rest of the body to help raise its immunity, but without success.

#### Treatment of Nevi

DR. W. S. NEWCOMET, Philadelphia: All "birth marks" should be treated as soon after birth as is practicable. Some of these nevi, particularly the moles, tend to become malignant. Of the true nevi, the best results are to be expected in the cavernous type, in which the veins are covered with healthy skin; here several methods are available. The electric needle, galvanism, or diathermy will destroy these enlarged veins without injuring the overlying skin. If, however, the skin is involved with discoloration of the superficial layer, then the application of radium will give the best results. The most difficult nevus to treat and to obtain a result that is cosmetically good is the superficial and widely disseminated variety. Radium, high frequency and the ultraviolet light have been employed. The pigmented nevus, when not too deep, will yield most satisfactory results under radiation, either from the Roentgen rays or from radium. If the area is wide, the use of the Roentgen ray is attended with some danger from overtreatment of the underlying parts.

When the nevus is thick and leathery, the cosmetic result is questionable. The fact that these nevi are covered with hair does not seem to have any effect on the result. In the more severe types of nevi, radiation offers the best means for their eradication. The scar tissue produced from the application of caustics and similar methods depending on cauterization leave them extremely sensitive to radiation, and at times ulceration is difficult to avoid. The results under such circumstances are extremely poor.

### Present Status of Roentgen Therapy of Leukemia

DR. H. K. PANCOAST, Philadelphia: Successful results require care in the preliminary treatment of the active period of the disease, persistence in treatment until every manifestation has disappeared, a careful watch over the patient thereafter, and a resumption of applications on the appearance of the first evidences of a relapse. The institution of modern methods of deep therapy in leukemia, modified to suit the peculiar condition, has shortened the time for inducing a primary symptomatic cure in our cases, and the average prolongation of life has, perhaps, been slightly increased, but the ultimate results have not been altered. We still advocate the use of small doses of arsenic in those cases in which progression ceases and the condition remains stationary without further improvement, and also those in which there is a low red count, or the red corpuscles or hemoglobin are diminishing. In recent years, benzene (benzol, $C_6H_6$) has become a strong competitor of the Roentgen ray as a therapeutic agent in leukemia, but when results have been carefully compared we believe that the latter is to be preferred and is safe. The results of the past few years show that Roentgen therapy is the most successful and the safest agent known in the treatment of leukemia.

### Discussion on Roentgen Therapy

DR. W. A. PUSEY, Chicago: My views with regard to epithelioma are the same as I held ten or twelve years ago. When the deep structures or adjacent glands are involved, it is not a case for Roentgen therapy, but a mass of epitheliomatous tissue on the surface of the body can be destroyed effectively with the Roentgen ray. When the lesion is situated on the eyelid, the Roentgen ray is very valuable, because you can cure the lesion and save the eyelid, which you cannot do if you resort to surgery. In the case of lesions in the inner canthus or intra-orbital fat, my experience has not been good. As to epithelioma of the lower lip, some surgeons maintain that every such case should have a radical incision, including cleaning out of the neck. That sounds good, but in some cases it is not a feasible procedure. If I had a superficial epithelioma of my lower lip, no surgeon could cut it out. My rule is to touch no case wherein operation is practicable, unless it is one in which you may expect there is no involvement of the glands under the jaw. In cases in which the deep structures are involved, the surgeon should have the first chance; but the probabilities of a cure by any method are extremely remote. I do not think that the Roentgen ray is best for the treatment of most vascular nevi. I treat pigmented nevi with the Roentgen ray to the point of getting a reduction and getting rid of the hairs; then I try to smooth up the surface with the careful use of carbon dioxid snow. One must be very careful in these cases, because the Roentgen ray has produced hyperemia of these tissues and endarteritis in the smaller vessels. When one uses carbon dioxid snow, one must use very weak applications for a very short period of time. For vascular nevi, I have ceased to use the Roentgen ray. In some flat vascular nevi I have obtained perfect results; they disappeared completely. In large angiomatous nevi, I often get a great shrinking and a great improvement, although at times I do not succeed so happily. In the flat nevi one is apt to get some telangiectasia, which interferes with the result. Radium in nevi gives the same results as the Roentgen ray. The objection to radium is that in using an applicator one must treat small areas, and one is apt to checkerboard the skin. For flat vascular nevi the best treatment at present is the ultraviolet ray from the quartz lamp. This gives beautiful results without any unpleasant after-effects. In the cavernous angiomas I use radium, the Roentgen ray or carbon dioxid snow, depending on the case and the results I am trying to produce. As to the Roentgen treatment of tuberculous peritonitis, I too have had a considerable experience with it. My results have been quite in accord with Dr. Eisen's. One patient was treated surgically, as well as with the Roentgen ray. The former failed; the latter succeeded. She has remained well for twelve years. I see no reason why we should be surprised that the Roentgen ray does not cure leukemia or pseudoleukemia. It affects only the adenoid tissue. I have seen cases cured symptomatically, and improvement was maintained for a considerable period of time. I believe that Roentgen ray offers more prospect of amelioration than anything else. I have not seen any toxic effects from the use of the Roentgen rays in leukemia. I have always given very light exposures, which may account for my experience.

DR. GEORGE C. JOHNSTON, Pittsburgh: Regarding the treatment of tuberculous peritonitis with the Roentgen ray, if the abdomen has been opened previously the atmosphere has played its part. If the patient is exposed to the Roentgen ray afterward, we cannot claim for it the credit of a cure. I have seen cases of tuberculous peritonitis cured without the use of the Roentgen ray, in which the abdomen was opened and closed.

DR. KENNON DUMHAM, Cincinnati: Dr. Savage of Cincinnati is carrying on investigations in cattle. He uses ether, without opening the abdomen or letting any air into it. Murphy of the Rockefeller Institute has shown that great good could come by raising the lymphocyte count, and it is here that the Roentgen ray may prove valuable.

DR. GEORGE E. PFAHLER, Philadelphia: I believe that, properly used, the Roentgen ray is useful in tuberculosis in different parts of the body, but the work must be controlled and studied carefully. I was very much interested in Murphy's work on the lymphocyte count. I made a series of investigations in a number of cases that I treated, but did not find any more variation in these cases than in the average case. My experience with the lymphocyte count was discouraging. Regarding epithelioma of the lip, I destroy the tumor with the high frequency current and then give deep Roentgen therapy over the lip and the glandular area leading therefrom. I am getting better results than from the Roentgen ray alone or from surgery. As to nevi, I have had most satisfactory results by destroying the lesion by means of the high frequency current and then using the Roentgen ray afterward to prevent the formation of keloids. In cases of flat nevi, I have seen the best results from the use of the quartz lamp, although I have not used it myself. In leukemia, I have been following Dr. Pancoast's method, and my results correspond with his. The early results are brilliant; three or four or five years later there is a sudden relapse, and the patient dies.

DR. W. S. NEWCOMET, Philadelphia: I know of two cases in which the Roentgen ray accomplished what benzene failed to do. Radium therapy is at present where the Roentgen ray was fifteen years ago, and our results will not be good until our technic is better, and that cannot be improved while we know so little about radium. The flat applicator is worthless. The tubes are the best, no matter what strength of radium they contain. But a better method for using radium must be found. The great trouble is the cost and the manipulation.

DR. H. K. PANCOAST, Philadelphia: I treated a number of cases of tuberculous peritonitis some years ago. Patients with fluid and tubercles all over the peritoneum usually recover, but when there is a thick plastic exudate the outcome is not so good. Dr. Pusey spoke about the small dosage in leukemia. That is a method with which we were able to accomplish much where others had failed. In the cases of acute lymphatic leukemia, a great deal of harm is still being done; the final outcome is hastened. I recall an instance in which I was asked by mail to give some advice as to the treatment of such a case. I replied, urging them not to use the Roentgen ray. If I had wired my answer, the fatal outcome in that case might have been postponed.

(To be continued)

## THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

*Sixty-Sixth Annual Meeting, held at Scranton, Sept. 18-21, 1916*

*(Continued from page 1329)*

### Diabetic Gangrene

DRS. JOHN H. JOPSON and E. H. GOODMAN, Philadelphia: Judging from the favorable result of the treatment of diabetes by the Allen method, it is perhaps not too much to hope that, with careful consideration of every case of uncomplicated diabetes, diabetic gangrene may be prevented. We believe that diabetic gangrene is only a manifestation of an infection on the basis of lowered tissue resistance plus arteriosclerosis in most cases. There is, however, no specific organism of diabetic gangrene. The rational treatment of diabetic gangrene should be dietetic and local. Should the condition progress in spite of the strict observance of Allen's dietetic method together with proper local measures, then the indications for amputation must be considered. These indications are extension of the local process with signs of septicemia and high glycosuria; or extension of the local process with signs of septicemia in the presence of acidosis. However, in the presence of septicemia, even with low glycosuria or sugar-free urine, operation may be indicated. A high percentage of glycosuria in no way contraindicates operation, although it is better to reduce the urinary sugar if possible. When the local and general conditions become grave, operation should not be deferred. Our experience has shown that fasting should give place to free feeding some time before operation. We favor the use of alkalies in large enough doses to render the urine alkaline before operation, and prefer to administer sodium bicarbonate by mouth and by proctoclysis. Water is given freely before operation, and operation may be performed under local anesthesia. Ether and chloroform are contraindicated with patients giving a history of glycosuria.

DISCUSSION

DR. MOSES BEHREND, Philadelphia: It has been my experience that results of operation after the Allen treatment have been far superior to any other form of treatment. There is another form of gangrene in diabetes. It is an insidious form of localized gangrene which occurs around the extensor tendons of the toes. It is a grave symptom, and the prognosis in all these cases must be guarded. Death results whether or not operation is performed.

### Attitude of the Department of Labor and Industry Toward the Problem of Occupational Diseases

MR. JOHN PRICE JACKSON, Harrisburg: Since the inauguration of the system of accident compensation, January 1 of this year, between 50,000 and 60,000 injured workmen have received compensation. But 2 per cent. of these cases were appealed to referees. This law has not been paternal in its operation, but has offered an effective medium for the amicable settlement of claims. The matter of division of payment between hospitals and physicians, and the inclusion within the scope of the law of vocational or occupational diseases are problems to be adjusted by succeeding legislatures. The difficulty arising in the latter problem is the question of what constitutes occupational disease. The Pennsylvania Department of Labor and Industry is inclined to believe that strictly vocational diseases should be treated under the compensation law in the same manner as industrial accidents. Great care, however, in the preparation of such legislation is necessary. Reports on occupational diseases should be made to the bureau of statistics of the department, and clinics on occupational diseases might be established throughout the state. In the matter of the proposed compulsory health insurance, we face the problem of maintaining individual freedom, initiative and self-reliance against the advantages of community action. It has also been argued in favor of compulsory health insurance that many of the poorer population do not have needed medical attention. A system of compulsory health insurance which will not deprive our people of the ability to care for themselves is undoubtedly desirable. The medical profession of the state, possibly headed by a commission appointed by the legislature and the governor, should give most careful attention to health insurance and its corollary, old age insurance. If such attention is not given, the movement may result in a paternalistic injurious governmental system.

DISCUSSION

DR. J. W. SCHERESCHEWSKY, Washington, D. C.: Commissioner Jackson has outlined two problems of greatest concern to those interested in social medicine: (1) whether certain occupational diseases shall be included in the scope of the compensation act; and (2) whether the United States shall establish systems of health insurance. There has been a general objection to industry bearing the economic loss due to certain forms of occupational disease. This attitude gives rise to many inconsistencies. For example, a man may be suddenly overcome by benzene fumes while waterproofing a tank. On the other hand, a girl working in a cannery may become chronically poisoned by the fumes of benzene with resulting death. The only difference in the two cases is the period of time in which death was produced. The inference is logical that if compensation is due in the first instance it is equally so in the second. Social insurance must be regarded as our next most important social advance. It is obvious that if the cost of social insurance were conditioned in a special locality or industry by the general prevalence of disease, it would create a strong financial stimulus to preventive measures.

DR. H. F. SMYTH, Philadelphia: In deciding on the rôle of an occupation in the cause of disease we must consider the individual's previous occupation, his general health and physique, his personal habits and home hygiene as well as the general hygiene of the plant in which he is employed and the special precautions taken to minimize the particular hazard. As Dr. Jackson says, the definite occupational diseases are limited in number. To increase this list of compensable diseases, full reports on all occupational diseases should be made compulsory. The tabulation should show also the proportion of diseased to healthy individuals in the industry or process. The adoption of general health insurance for workmen would minimize some difficulties of decision, but I doubt whether this country is yet ready for this.

DR. JAMES I. JOHNSTON, Pittsburgh: A case coming under my observation and illustrating some of the complexities of this subject was that of a coal miner who sustained a fractured rib injury, for which he was, of course, entitled to compensation. We all know how conducive this occupation is to fibroid phthisis. This man claims that he does not recover, and a diagnosis has been given of established tuberculosis. It is not improbable that the man had tuberculosis and that when injured his resistance was lowered, as a consequence of which the tuberculosis became active. How to meet the situation and treat the man justly is difficult to determine.

DR. FRANCIS D. PATTERSON, Harrisburg: I believe the medical profession of Pennsylvania should formulate a definition of occupational disease which will stand an "acid test." On behalf of the Department of Labor and Industry I want to make a plea that the department be given opportunity to gather definite statistics on such diseases.

## SYMPOSIUM ON FIRST AID

### The Railroad Phase

DR. JOSEPH B. HILEMAN, Harrisburg: The problem of first aid on the Pennsylvania Railroad has been to provide a suitable simple dressing and to instruct the employees in its use. The first aid packet is air and moisture proof and is distributed in tin boxes which hold six dressings. On the outside are printed instructions for its use and a tag bearing an order for a fresh box as soon as the seal is broken. These packets are placed wherever they may be of use. Stretchers and blankets are supplied to all baggage, mail, express and work cars, stations and shops. Employees are taught to confine themselves strictly to first aid and in severe cases to send for the nearest physician. The dangers of infection

and hemorrhage are pointed out. No drugs or whisky are to be given. Employees are taught methods of resuscitation from electric shock by means of the Schäfer method. The results have been most satisfactory.

### Injuries Common to Policemen and Firemen and Their First Aid Treatment

DR. HURLEY R. OWEN, Philadelphia: The principles of first aid treatment of injuries are to stop hemorrhage, keep the wound clean and put the part at rest. We use the army tourniquet; wounds are swabbed with iodin. An immunizing dose of antitoxin is given in all cases of punctured wounds; only one case of tetanus has developed in the fire department since 1871. In shock we use morphin freely. Whisky is not a good remedy for smoke cases. We use six pulmotors in the fire department.

#### DISCUSSION ON FIRST AID

DR. J. B. CARNETT, Philadelphia: Unfortunately it is not often possible to have at the scene of accident the surgeons and equipment described by Dr. Owen. The fact that more than a million serious accidents occur each year in the United States urgently demands more widespread knowledge of first aid. A great many lives have been saved each year by the prompt application of first aid, and many more could have been saved had the principles of intelligent first aid been more generally known. It is no doubt true that in exceptional instances first aid teaching when perversely applied may lead to meddlesome surgery or even to disastrous results. Such deplorable instances fortunately are rare, and are overwhelmingly counterbalanced by the great number of lives that are saved by intelligent first aid attention. First aid should be included among the subjects taught in the public schools.

DR. W. F. SKINNER, Chambersburg: With reference to burns generally, a good rule to follow is the washing of the parts with Castile soap and warm water, using pledgets of cotton for the removal of foreign matter and then applying normal salt solution, heavy dressings of gauze and parchment paper.

DR. A. W. COLCORD, Clairton: The tourniquet must never be made tight enough to stop hemorrhage, only the spurting from the wound. The remaining hemorrhage must be stopped by direct pressure on the wound. The iodin treatment for wounds is the best for application at the roadside, the private home, hotel, or anywhere outside of the hospital. In emergency hospital work the constant wet dressing is the best. This is made of a saturated solution of boric acid, one fourth, and alcohol, three fourths. It is applied directly to the wound. In several thousand cases we have not had a primary infection.

DR. EDWARD MARTIN, Philadelphia: The emergency which is commonest is not the fatal hemorrhage, or the discrimination between uremia, apoplexy, heat exhaustion or sunstroke, but infection, and there is no concerted view as to how infection should be treated in emergency, excepting that it should not be treated by fingers. It is time to formulate our knowledge.

### Modern Hospital Organization in Rural Pennsylvania

DR. HAROLD L. FOSS, Danville: Pennsylvania, with a population of about 6,000,000 outside of the large cities, has about 150 hospitals, good, bad and indifferent. Fully 90 per cent. of these have no trained laboratory worker; not over 20 per cent. of them are prepared for Roentgen therapy or fluoroscopy. Whenever a young member of the staff attempts to develop a laboratory he receives such poor cooperation that he soon becomes discouraged. The recent requirement of an internship of one year on the part of those applying for license to practice medicine has led to great improvement in these conditions. Organization is first and last the paramount factor in efficiency. Staff appointments should be only on merit. The success of the rural hospital will depend largely on the education of the people, the training of the general practitioner, a clearly defined need for a hospital in the community, the construction of an adequate and well equipped institution, a sound financial basis, a competent and efficient administrator, a broad, sensible policy, thorough and scientific care of the sick, individual investigation of the financial resources of all patients and discouragement of undiscriminating charities, and an efficient system of purchasing.

#### DISCUSSION

DR. T. B. APPEL, Lancaster: We should all agree on the importance of the development of the laboratories. The modern hospital, particularly in a small town, is in a sense an educational institution for the profession.

DR. A. R. ALLEN, Carlisle: The present board of medical examiners has done more to elevate the medical profession and bring the hospitals up to the standard than all the work done heretofore in Pennsylvania.

DR. FREDERICK L. VAN SICKLE, Olyphant: Because of compensation laws and workmen's insurance, the manufacturer and the mine and mill owner are willing to pay somebody well to get the sick man cured. Therefore the efficiency of the smaller rural hospital must be increased.

DR. JOHN B. ROBERTS, Philadelphia: Some things must be obtained for efficiency, first, a permanent medical dictator. The damnation of small and large hospitals is the fact that nobody is boss and every man who comes on duty every six weeks orders something different.

DR. J. M. BALDY, Philadelphia: The matter rests with the staff of the hospital. If they rise to the opportunities that have now come to them for the standardiaztion of their institutions, we will be patient. We found in our inspection that from 75 to 80 per cent. of the work done in the rural districts was surgical and that, of that, about 75 to 80 per cent. was emergency work. How can the Bureau of Medical Education and Licensure send an intern into such a hospital for his fifth year? If this condition is not altered, such institutions will simply get a credit for second or third year internship and be classified as special hospitals.

### Treatment of Deformed Union and Nonunion of Fractures

DR. JOHN B. ROBERTS, Philadelphia: Deformed union of bone is usually due to lack of knowledge of efficient treatment of the fracture or to neglect in applying well-known mechanical or physical principles to the problem of treatment. Operative exposure for remedying deformed union of bone is demanded in only a limited number of cases. Subcutaneous refracture for the correction of angular deformity is comparatively easy. This procedure is available and successful for a long period after the fragments have been firmly united. After-treatment is on the same lines as in accidental fracture. Repair in delayed union should be hastened by massage and good food, air and surroundings, and the interrupted use of constriction with a rubber band at the proximal side of the fracture. There should not be too hasty resort to operation in nonunion. Use of the limb and rubbing the ends together by manipulation, and injection of blood hypodermically into the tissues around the fracture are helpful. When these measures fail, operative treatment is demanded.

### Ligation of the Superior Pole of the Thymus in Operating for Goiter

DR. LEVER F. STEWART, Clearfield: In dissections which I have made, in the majority of cases, the inferior thyroid arteries gave branches to the superior pole of the thymus. In some instances this branch is given off on only one side. In one out of ten cases no such branch is given off. Ligation of the inferior thyroid artery close to the gland does not touch its branch to the thymus. As a result, the thymus may become congested and enlarged. Ligation of the superior pole of the thymus would circumvent this and in addition have a favorable influence on the thyroid participating in the disease.

#### DISCUSSION

DR. G. T. MATLACK, Wilkes-Barre: In my experience in doing thyroidectomy it is rarely that we see the enlarged thymus. We have removed three enlarged thymus glands, but not in exophthalmic goiter. We are looking for it all the time and do not find it. I believe we shall have to give the thyroid credit for most of the evils.

DR. CHARLES H. FRAZIER, Philadelphia: I rather feel disposed to take the view that Dr. Matlack has as to the importance of the thymus gland in the intoxication we see associated with the enlarged thyroid. I have not found in my clinic, and I have been looking for it, any coincident enlargement of the thymus in thyrotoxicosis.

DR. GEORGE C. JOHNSTON, Pittsburgh: The relation between the thymus and thyroid in cases of thyrotoxicosis is a very doubtful one. Practically there is little connection. Many of these cases of undoubted thymus are diagnosed as aneurysm or mediastinal tumor, but if you place the patient in the recumbent posture you will find that the thymus drops over and gives the shadow of a dog's ear. It is so unusual that it is absolutely diagnostic.

### Cholecystectomy the Operation of Choice

DR. A. RALSTON MATHENY, Pittsburgh: Gallstones do not constitute a disease per se, but are always a sign of a previously diseased gallbladder which, once diseased, either remains a nidus of infection or, as a result of inflammation, loses its function. Therefore, it is reasonable to remove it if the risk is no greater than drainage would be. If we remove the gallbladder, except where it is necessary for drainage, we shall avoid the unpleasant experience of an unimproved patient and removal of the gallbladder by another surgeon.

DISCUSSION

DR. J. A. LICHTY, Pittsburgh: I should rather have a live patient with the gallbladder in than a dead patient with the gallbladder out.

DR. ERNEST LAPLACE, Philadelphia: Only one reason stands in our way of removing the gallbladder, the supposititious one that it is a necessity to functionating of proper digestion. It has been proved that it is not. Therefore why preserve an organ that is not of essential use to the system? I remove all gallbladders, and hesitate only when the necessary time required for proper work might jeopardize the life of the patient. Not that I fear the after-results, but that the doing of this operation in the correct way at the time does not seem possible.

DR. JOHN H. JOPSON, Philadelphia: When I began to remove gallbladders, the mortality of cholecystectomy was higher than cholecystostomy. With the improvement of technic the mortality is no more than in cholecystostomy, and end-results are very much better. I am still taking out gallbladders which I formerly drained. I think when a gallbladder is acutely inflamed and patchy with gangrene, as in some cases of acute pancreatitis, or in occasional cases of infection of the gallbladder, we would better let it alone.

DR. HAROLD L. FOSS, Danville: There is no question about the value of cholecystectomy, as there are cases in which there is a history of recurrence of stone. I recently performed a cholecystectomy on a patient operated on three times before for gallstones. When the gallbladder was removed, we counted over 500 shotlike millet seeds. That patient had been drained three times before.

### Conservative Treatment of Puerperal Sepsis

DR. E. E. MONTGOMERY, Philadelphia: My experience leads me to condemn the resort to operative interference in cases of infection as being prejudicial to the patient. It is better to keep the patient clean and trust to Nature rather than to interfere surgically. The objection to early surgical interference is that the organs have already passed beyond the reach of surgical measures, and these only break down barriers which Nature has instituted. I should advocate the use of autogenous vaccines prepared from the blood of the patient, and in cases in which these could not be obtained, the employment of prepared serums, even horse serum. Measures that should be instituted are those to promote effective elimination and immunity. I should not hesitate to employ surgical measures, even sacrificial surgery, in those cases in which the organs are destroyed and are simply foci for further extension of disease.

DISCUSSION

DR. G. E. SHOEMAKER, Philadelphia: Radical measures, as usually understood, are not required in the management of puerperal sepsis. The maternity infections which come to us are not those patients whom we have ourselves delivered. We are, therefore, without a history which is reliable as to the absence of retained pieces of placenta. Other patients come to us as the result of criminal interference and there we have no history. Other cases have been examined hastily and recognized and unloaded on the hospital. In these cases we must change our attitude as to noninterference. We must never forget that these patients tend to recover of themselves. In regard to an active interference by a cutting operation, I hesitate to do it above the pubis unless absolutely obliged to do so.

(*To be continued*)

# *Current Medical Literature*

## AMERICAN

Titles marked with an asterisk (*) are abstracted below.

### Annals of Surgery, Philadelphia

*October, LXIV, No. 4*

1 *Exophthalmic Goiter. A. J. Ochsner, Chicago.—p. 385.
2 *Surgical Treatment of Goiter. M. F. Porter, Fort Wayne, Ind.—p. 395.
3 *Results of Surgical Treatment of Exophthalmic Goiter. V. C. David, Chicago.—p. 400.
4 Surgical Treatment of Perforated Ulcer of Stomach. A. O. Wilensky, New York.—p. 403.
5 Nine Consecutive Operations for Perforated Gastric and Duodenal Ulcers. J. F. Shea, Bridgeport, Conn.—p. 410.
6 Case of Rupture of Common Bile Duct Associated with Subphrenic Abscess. H. C. Bumpus, Jr., Rochester, Minn.—p. 414.
7 Anomalies of Gallbladder and Bile-Passages; Review of Literature and Report of Double Gallbladder and Floating Gallbladder. A. Schachner, Louisville, Ky.—p. 419.
8 *Interpretation of Functional Renal Tests with Special Reference to Significance of Minimal Excretion of Phthalein and Indigocarmin. E. Beer, New York.—p. 434.
9 Traumatic Injuries of Kidney and Ureter; Review of Literature and Report of Nine Cases. H. G. Bugbee, New York.—p. 459.
10 *Os Calcis Fracture. F. J. Cotton, Boston.—p. 480.

1. **Exophthalmic Goiter.**—Summarized Ochsner's rules for goiter patients are as follows: Avoid all excitement or irritation, get an abundance of rest, by going to bed early and taking a nap after luncheon. Have an abundance of fresh air at night. Eat and drink nothing that irritates the nervous system. Do not use tobacco. Eat very little meat. If very fond of meat, take a little beef, mutton or breast of chicken or fresh fish once or twice a week or at most three times a week. Drink a great deal of milk or eat things that are prepared with milk, cream and buttermilk are especially good. Avoid any kind of meat broths. Eat an abundance of cooked fruits and cooked vegetables, or very ripe raw fruits, or drink fruit juices prepared out of ripe fruits. Eat eggs, bread, butter, toast, rice and cereals. Drink an abundance of good drinking water, or if this is not available, boil the drinking water for twenty minutes or drink distilled water. Ochsner claims that with the exception of a very small number of cases in which an insufficient amount of the gland had been primarily removed, or in which the remnant which had been left at the primary operation had increased in size, and which have had a recurrence, he has almost invariably found that they had either disregarded the directions given regarding diet and rest and hygiene following their operative treatment, or they had been permitted to return to their homes without definite instructions in this direction. It is, therefore, very important that written or printed directions be given these patients and that they be thoroughly impressed with the importance of using these directions.

2. **Surgical Treatment of Goiter.**—In Porter's opinion it should be the rule to remove all permanent goiters whether they are producing symptoms or not. He says that were this rule followed there would be fewer cases of toxic goiter. There is as much reason for removing so-called simple goiters with a view to preventing them from becoming toxic

as there is for removing or curing by surgical means certain lesions, such as warts, moles, and chronically inflamed areas, to prevent them from becoming malignant.

3. **Surgical Treatment of Exophthalmic Goiter.**—Of 200 successive patients with exophthalmic goiter operated on at the Presbyterian Hospital, Chicago, prior to December, 1914, David says, eleven, or 5.5 per cent., died in the hospital. To ascertain the condition of the patients who had been operated on more than a year previously a series of questions were addressed to them. Sixty-five answers were received. A percentage of 38 were cured and 40 per cent. were greatly benefited. Of thirty-five patients having exophthalmos before operation only thirteen, or 37 per cent., reported themselves relieved from it. The duration of symptoms before operation in the patients cured was sixteen months, in those greatly benefited was twenty-three months, and in those not improved was thirty-three months.

8. **Functional Renal Tests.**—Extrinsic causes (usually obstructive in character), Beer says, may lead to permanent symmetrical renal damage, evidenced by minimal or zero excretion of phthalein and indigocarmin associated usually with high blood urea and high incoagulable nitrogen blood content. Operation in these cases will be of no permanent benefit, and even the slightest (in one case the passing of a cystoscope) may bring on a fatal uremia. Similar extrinsic causes may lead to temporary renal damage evidenced by the same phenomena as Type 1. Operation in these cases, particularly after adequate preliminary treatment, will be rarely followed by uremia. These two wholly different types of cases can be differentiated by removal of the usual causative factor, that is, relief of the obstruction, either by use of indwelling catheter, or regular catheterization, or by preliminary cystostomy under local anesthesia or gas. If the case is of Type 1, no marked change in the renal output will result, whereas if the case is of Type 2, the renal output will regularly improve.

A similar low combined output may be caused reflexly (inhibitive or toxic) by more or less extensive disease of one kidney, while the other kidney is adequate and improves in its function after removal of its diseased mate, or after relief of the pathologic condition in its mate. A low combined output may also be due to bilateral intrinsic causes and improvement in these cases is possible only after operative attack on the kidneys, or the kidney, if single, under an anesthetic which has no injurious effect on the diseased kidney, parenchyma and provided no severe wound infection or other septic, etc., complications which overtax this parenchyma develop.

10. **Os Calcis Fracture.**—Briefly, the method the late Louis Wilson and Cotton worked out together and which has proved very satisfactory clinically is as follows: (1) loosen up the fracture by manipulation; (2) pull the heel down with ice-tongs; (3) free the joint motion between astragalus and calcis; (4) push in the displaced bone under the external malleolus by slowly striking with a big mallet on the outer side of the foot; padding with felt to take the blow; supporting the inner side of the foot on a sand bag. This impacts, and, owing to the fact that the outer plate is firm, the impaction is usually fairly solid; (5) put the foot up in plaster; with the heel-cord slack; avoid direct pressure on the heel.

## Archives of Pediatrics, New York

*October, XXXIII, No. 10*

11 *Case of Lymphosarcoma of Sigmoid. A. L. Goodman, New York. —p. 721.
12 *Clinical Study of Sixty Cases of Postnasal Infections; Six Cases Complicated by Acute Hemorrhagic Nephritis. G. E. Baxter, Chicago.—p. 729.
13 Eosinophilia Occurring in Infants Following Ingestion of Foreign Protein. H. C. Berger, Kansas City, Mo.—p. 742.
14 Infant for Adoption. J. B. Manning, Seattle, Wash.—p. 750.
15 Case of Chondrodystrophy. J. F. Sammis, New York.—p. 755.
16 Sixty-Eight Blood Examinations in Infancy, with Review of Recent Literature. H. M. McClanahan and A. A. Johnson, Omaha.—p. 757.
17 Ruptured Appendix Found at Necropsy in Infant Suffering from Colon Bacillus Infection of Urinary Tract. F. Van der Bogert, Schenectady, N. Y.—p. 772.
18 *Use of Salt Solution by Bowel (Murphy Method) in Infants and Children. E. E. Graham, Philadelphia.—p. 775.

11. **Lymphosarcoma of Sigmoid.**—Goodman reports the case of a girl aged 4 years, who had chronic constipation and bleeding from the rectum, accompanied with extreme pallor and marked weakness, which commenced about three weeks before admission. At the same time the mother noticed a hard lump in the baby's abdomen. The child was in very good health up to four months before its entrance into the hospital. Previous to this time the bowels had been fairly regular. About two weeks before the appearance of the blood, the mother noticed that the child would have severe abdominal cramps before an evacuation of the bowels. During the three weeks previous to her admission, there would be severe straining at stool, but no fecal matter would be expelled, but at times small quantities of pure blood. At one time half a pint of pure blood passed during one of these severe attacks of straining. These attacks became more frequent, and for the three days preceding admission, the child would have two or three movements of pure blood during the day. The mother noticed that the lump in the abdomen would change its position from day to day, and that it had grown larger in size. The child was operated on four days after admission. A tumor of the sigmoid about 6 inches in length, and 3 inches in width, was found with metastatic lymph nodes in the mesentery, also surrounding the intestine. The tumor was removed, the two ends of the intestine, one corresponding to that part of the sigmoid just below the splenic flexure of the colon, the other to the upper part of the rectum, were joined together. Four days later the child died with symptoms of a general asthenia. Diagnosis—lymphosarcoma of the large intestine.

12. **Clinical Study of Postnasal Infections.**—Baxter points out that the occurrence of an acute hemorrhagic nephritis as a complication of what at first thought may seem to be a mild cold in the head, or a simple earache, should teach us the importance of proper care of all simple infections of the upper respiratory tract and the necessity of being constantly alert to the possibility of the development of such a severe complication.

18. **Use of Salt Solution by Bowel.**—Graham's experience with the Murphy method in treating pylorospasm has been very gratifying, and in the case of a 25 days' old infant with severe jaundice, persistent vomiting and diarrhea, the stools being largely composed of mucus, which was black, the employment of this method, as a last resort, was followed by speedy recovery. Graham regards the infusion of normal saline into the bowel by the drop method as a most valuable aid in the treatment of all exhausting diseases of infancy and childhood, and believes that by its stimulating effects threatened collapse can often be averted. In feeding children and infants who cannot retain nourishment given by mouth, a nutrient enema given drop by drop is often better retained and absorbed than when given more rapidly.

## Boston Medical and Surgical Journal

*October 12, CLXXV, No. 15*

19 Were Sailors of Columbus First European Syphilitics? A. F. Downing, Cambridge.—p. 515.
20 Plan of State Department of Health for More Tuberculosis Hospitals. E. R. Kelley, Boston.—p. 524.
21 Relation of Antituberculosis Society to Local Board of Health. J. W. Tapper, Lynn.—p. 526.
22 Visiting Tuberculosis Nurse. M. Van Zile, Beverly.—p. 528.
23 Tuberculosis in Rural Communities. V. Adriance, Williamstown. —p. 533.
24 Some Problems of Trustees of Massachusetts Hospitals for Tuberculous. A. K. Stone, Boston.—p. 533.
25 Value of Program of Work for Antituberculosis Societies. W. H. Lothrop, Newtonville.—p. 535.

*October 19, No. 16*

26 Surgery of Thyroid. C. A. Porter, Boston.—p. 551.
27 *Alpha-Iodin, Active Constituent in Thyroid; Its Chemical Nature and Function. E. C. Kendall, Rochester, Minn.—p. 557.
28 *Conditions Affecting Secretion of Thyroid. W. B. Cannon, Boston. —p. 562.
29 Clinical Value of Metabolic Studies of Thyroid Cases. W. M. Boothby, Boston.—p. 564.
30 Partial Thyroidectomy with Local Anesthesia, Scopolamin and Morphin. F. H. Lahey, Boston.—p. 566.

31 Treatment of Exophthalmic Goiter by Roentgen Ray. M. Seymour, Boston.—p. 568.
32 Excretion of Hexamethylenamin by Damaged Kidneys. G. G. Smith, Boston.—p. 569.
33 Ileocecal Valve and Chronic Intestinal Invalid. J. Bryant, Boston. —p. 572.

27. **Alpha-Iodin, Active Constituent in Thyroid.**—It appears from Kendall's investigations that the entire activity of the thyroid is manifested by the administration of alpha-iodin, a crystalline compound, alone. There appears to be no other substance in the thyroid secretion which acts directly. This substance, given even in very small amounts, will supplant thyroid activity, relieving the conditions of myxedema and cretinism, and in excess will produce symptoms simulating exophthalmic goiter. It appears to have no direct action on the pulse rate. The extent to which the rate is affected depends not on the administration of the thyroid, but on the simultaneous ingestion of food, and in particular of amino-acids. This effect may be outlined as follows: After the administration of the compound, there is no apparent effect for many hours. There is no increased pulse rate, nor drop in blood pressure. However, if the thyroid hormone and amino-acids are injected simultaneously, the pulse rate is enormously affected, and even death may result, due to the apparently great increase in metabolism going on in the animal. It appears very probable that the thyroid hormone manifests its activity by reacting in some way with amino-acids.

28. **Conditions Affecting Secretion of Thyroid.**—To test the effect of overstimulation in a particular region of the sympathetic system, Cannon about two years ago, fused in the cat the anterior root of the right phrenic nerve with the right cervical sympathetic strand. Thus, after regeneration had occurred, there was delivered to the neurons in the superior cervical ganglion a volley of impulses every time the animal breathed. The operations were performed early in May. In October, four of the six animals were still alive. All had peculiar symptoms. There was marked tachycardia. Though fed like normal animals, they had loose movements of the bowels. They were unusually excitable. The basal metabolism was much elevated. In two animals that died of the disease, the suprarenals were found much increased in weight. One of the animals had definite exophthalmos and respiratory oscillations of the pupil on the operated side.

Since these first observations, the disease has been produced in another animal, and it has been proved that the symptoms—rapid heart, increased excitability, steadily mounting metabolism, with loss of weight—all disappear on the removal of the thyroid on the operated side. The metabolism, which had increased approximately 100 per cent. dropped to within normal limits. Whereas the other animals having the induced disease had died within three months of the first appearance of the symptoms, this animal lived normally for seven months after the operation and was then purposely killed. The thyroid is subject to that division of the nervous system which is brought into action in emotional excitement, and which causes suprarenal secretion. Cannon believes that it is probable, therefore, that the thyroid, like the suprarenal, has, normally, functions which are performed in times of critical emergency and that such an emergency function is an exaggerated form of the routine activity of the gland.

## Delaware State Medical Journal, Wilmington

*July, VII, No. 8*

34 Diagnosis and Treatment of Poliomyelitis in Preparalytic Stage. J. A. Colliver, Los Angeles.—p. 2.
35 Epidemic Cerebrospinal Meningitis; Its Diagnosis and Treatment. B. H. Beeler, Wilmington.—p. 11.

*August, No. 9*

36 Keratitis; Report of Case. R. B. Hopkins, Milton.—p. 2.
37 What Stomach Symptoms Justify Surgical Intervention. M. B. Tinker, Ithaca, N. Y.—p. 3.
38 Curing Incurable. R. J. Folonie, Chicago.—p. 10.
39 Anthrax. J. Palmer, Jr., Wilmington.—p. 11.

## Iowa State Medical Society Journal, Des Moines

*October, VI, No. 10*

40 Attitude of Public to Physician. G. N. Ryan, Des Moines.—p. 417.
41 Pathology of Bacterial Infections. J. R. Allen, Waterloo.—p. 418.
42 Examination of Spinal Fluid as Diagnostic Procedure. J. S. Weingart, Des Moines.—p. 422.
43 Interrelation of Pelvic and Abdominal Pathology. J. H. Schrup, Dubuque.—p. 425.
44 Technic of Tonsillectomy. E. F. Chase, Rochester, Minn.—p. 429.
45 Infections of Lacrimal Sac and Their Treatment. C. P. Cook, Des Moines.—p. 431.
46 Hernias of Urinary Bladder. A. P. Heineck, Chicago.—p. 434.
47 Industrial Insurance vs. Physician. G. B. Palmer, Fort Dodge.—p. 436.

## Journal of Biological Chemistry, Baltimore

*October, XXVII, No. 1*

48 Study of Certain Dietary Conditions Bearing on Problem of Growth in Rats. C. Funk, New York.—p. 1.
49 *Cottonseed Meal as Incomplete Food. C. A. Wells and P. V. Ewing.—p. 15.
50 Physiologic Relation of Plant Carotinoids to Carotinoids of Cow, Horse, Sheep, Goat, Pig and Hen. L. S. Palmer, Columbia, Mo. —p. 27.
51 *Relation of Unidentified Dietary Factors, Fat-Soluble A, and Water-Soluble B, of Diet to Growth Promoting Properties of Milk. E. V. McCollum, N. Simmonds and W. Pitz, Madison, Wis.—p. 33.
52 *Influence of Ether Anesthesia on Amino-Acids of Blood Serum. E. L. Ross, Chicago.—p. 45.
53 *Studies on Growth. Comparative Value of Lard and Butter Fat in Growth. C. Funk and A. B. Macallum, Toronto, Canada.—p. 51.
54 *Id. Action of Yeast Fractions on Growth of Rats. C. Funk and A. B. Macallum, Toronto, Canada.—p. 63.
55 Reaction Between Amino-Acids and Carbohydrates as Probable Cause of Humin Formation. M. L. Roxas, Madison, Wis. —p. 71.
56 Direct Determination of Urea and Ammonia in Muscle. J. B. Sumner, Ithaca, N. Y.—p. 95.
57 Chymase of Solanum Elaeagnifolium. A. Bodansky, Ithaca, N. Y. —p. 103.
58 Separate Determination of Cholesterol and Cholesterol Esters in Small Amounts of Blood. W. R. Bloor and A. Knudson, Boston. —p. 107.
59 *Isolation of Growth Producing Substance from Sheep Pancreas. W. H. Eddy, New York.—p. 113.
60 *Studies in Creatin Metabolism. Possible Interrelations Between Acidosis and Creatin Elimination. F. P. Underhill, New Haven, Conn.—p. 127.
61 *Id. Influence of Alkali on Creatin Elimination During Inanition. F. P. Underhill, New Haven, Conn.—p. 141.
62 Id. Influence of Alkali on Creatinuria of Phlorhizin Glycosuria. F. P. Underhill and E. J. Baumann, New Haven, Conn.—p. 147.
63 *Id. Relationship of Creatinuria to Carbohydrate Metabolism and Acidosis. F. P. Underhill, and E. J. Baumann, New Haven, Conn.—p. 151.
64 Alterations in Output of Certain Urinary Constituents as Determined by Changes in Character of Diet. F. P. Underhill and L. J. Bogert, New Haven, Conn.—p. 161.
65 Interrelations of Blood Fat and Blood Sugar Content of Dogs Under Influence of Hydrazin. F. P. Underhill and E. J. Baumann, New Haven, Conn.—p. 169.
66 *Nutritive Value of Yeast, Polished Rice and White Bread, as Determined by Experiments on Man. C. Funk, W. G. Lyle and D. McCaskey, New York.—p. 173.
67 Nutritive Properties of Corn. A. G. Hogan, Manhattan, Kan.—p. 193.
68 *Colorimetric Method for Determination of Acetone in Urine. F. A Csonka, Pittsburgh.—p. 209.
69 Toxicity of Carotin. H. G. Wells and O. F. Hedenburg, Chicago. —p. 213.
70 Clinical Calorimetry. Number of Places of Significant Figures in Data of Metabolism Experiments. F. C. Gephart, E. F. Du Bois and G. Lusk, New York.—p. 217.
71 Permeability of Living Cells to Acids and Alkalies. A. R. Haas, Cambridge, Mass.—p. 225.
72 Acidity of Plant Cells as Shown by Natural Indicators. A. R. Haas, Cambridge, Mass.—p. 233.
73 *Influence of Bile on Autolysis. A. L. Tatum, Philadelphia.—p. 243.
74 *Rate of Urea Excretion. Rate of Excretion of Administered Urea in Young Healthy Adults on Constant Diet. T. Addis and C. K. Watanabe, San Francisco.—p. 249.
75 Volume of Urine in Young Healthy Adults on Constant Diet. T. Addis and C. K. Watanabe, San Francisco.—p. 267.
76 Changes in Cholesterol Content of Blood of Goats, Following Cholesterol Feeding Alone, Roentgen Treatment Alone, and Cholesterol Feeding Combined with Roentgen Treatment and Subsequent Castration. G. Luden, Rochester, Minn.—p. 273.

49. **Cottonseed Meal as Incomplete Food.**—According to Wells and Ewing cottonseed meal is an incomplete food. This is true even when it is fed with sugar and starch to a wide nutritive ratio.

51. **Relation of Unidentified Dietary Factors to Growth.**—The results of nearly 1,000 feeding experiments conducted by

the authors with their rat colony during the last few years all support the working hypothesis explained and supported by experimental evidence in a number of previous papers. This assumes the necessity of two dietary essentials as yet unidentified in the diet for growth or prolonged maintenance; namely, the fat-soluble A of butter fat and certain other foodstuffs, and the water-soluble B which the authors have supplied by means of extracts prepared with water or alcohol from several foodstuffs. Experimental inquiry has not yet revealed the degree of dependence of animals on a supply of these two dietary factors after growth has been completed. The evidence available would seem to point to the necessity of at least one of them, the water-soluble B, throughout life, for extracts which contain it induce relief of polyneuritis, and this may have its incidence at any time during life.

52. **Ether Anesthesia and Amino-Acids.**—Ross says that the amino-acid content of the blood serum of dogs is affected as follows: 1. Not materially changed in half an hour by feeding either carbohydrates or meat. 2. Increased considerably in four hours after feeding a pound of meat to each dog. 3. Not materially decreased by fifteen minutes of ether anesthesia, first, after a week of meat diet, second, after a week of low protein diet, third, half an hour after feeding meat, or fourth, half an hour after feeding carbohydrates and fat. The decrease at most is not above 4.0 per cent. 4. Decreased 4.6 to 9.2 per cent. after an amino-acid rise due to four hours of meat digestion.

53. **Comparative Value of Lard and Butter Fat in Growth.**—The failure of rats to grow on a lard and yeast diet, Funk and Macallum say, is partially due to the development of scorbutic symptoms. These can be relieved to a marked degree by using moist instead of dried yeast and still more so by using moist yeast and butter. Even in the latter case the existing deficiencies are not entirely corrected, since many rats decline on this diet. Rats which fail on lard do not always recover on a diet containing butter. It seems also possible that yeast on account of its high content in purins, and perhaps other constituents, is not an ideal addition in experiments of long duration, even in spite of its marked growth promoting power. The impaired nutritive value of heated casein does not seem to be due to destruction of amino-acids but to destruction of vitamins.

54. **Action of Yeast Fractions on Growth.**—The fractionation of yeast with phosphotungstic acid shows that the growth promoting substance is carried down with the precipitate and a large part of its activity is lost during the fractionation. The instability of this substance when fractionated with silver salts presents greater difficulty than that experienced during the fractionation of the beriberi vitamin. The authors suggest that both these problems can only be solved when more adequate methods are available.

59. **Vitamin in Sheep Pancreas.**—The results of Eddy's rat experiments seem to prove conclusively that the water soluble portion of the alcoholic extract of pancreas contains a substance that is capable of inducing marked increase in growth. This substance is removed from the extract without loss of power by treatment with Lloyd's reagent. It is also precipitated in the phosphotungstic precipitate of the extract. It is not a protein or fatty substance.

60. **Possible Interrelations Between Acidosis and Creatin Elimination.**—The facts enumerated by Underhill confirm the findings of McCollum and Steenbock that creatin may appear in the urine even when adequate carbohydrate is supplied; and they lead the author to the conclusion that creatinuria is not necessarily related to carbohydrate deficiency in the body. It would appear to be associated with a condition of acidosis which may and usually does accompany those states of metabolism in which carbohydrate deficiency is especially noticeable.

61. **Influence of Alkali on Creatin Elimination During Inanition.**—Underhill found that administration of alkali during the earlier days of starvation may greatly diminish or completely abolish the creatinuria of that condition. Later in the period of inanition introduction of alkali may not show as marked an influence on the existing creatinuria. The results of these experiments lend support to the hypothesis that there exists a relationship between acidosis and creatin elimination.

63. **Relationship of Creatinuria to Carbohydrate Metabolism and Acidosis.**—The results presented by Underhill and Baumann make it evident that creatin elimination in the urine may be induced by at least two different sets of conditions: (1) creatin may appear in the urine in states of acidosis in cases in which carbohydrate deficiency is not involved, and (2) creatinuria may be present during carbohydrate deficiency even in the absence of acidosis.

66. **Value of Vitamins in Human Nutrition.**—As a result of nutrition experiments with yeast it is shown that the value of yeast as a protein source is not very great. A large quantity of unutilized yeast passes in the feces and is lost. Yeast, on account of its high purin content, causes a distinct rise of uric acid in the blood, and for this reason cannot be used to the exclusion of all other food. Experiments with vitamin free food, in the form of white rice and white bread, confirm the results of Abderhalden, Fodor and Röse, who found that to obtain a positive nitrogen balance, more white bread is required than whole bread or potatoes. Whether this low value of vitamin free food is due solely to the absence of vitamin, the authors were not able to prove as their experiments were of comparatively short duration.

68. **Determination of Acetone in Urine.**—A colorimetric method for the quantitative determination of acetone in urine is presented by Csonka, based on the red color of the alkaline salt of dioxydibenzene acetone, which was first used by Frommer as a qualitative test for acetone. The method is also recommended for clinical use on account of its simplicity, accuracy and rapidity of estimation.

73. **Influence of Bile on Autolysis.**—Tatum found that bile is a powerful cytolytic agent. This cytolysis is produced by virtue of the co-enzyme or activating action of the constituents of bile on the autolytic enzymes or processes. Whole bile is more powerful though less penetrating than corresponding concentrations of either of the bile salts. The maximum effects of bile or bile salts are many times greater than the effects of the optimum concentration of acids. Sodium glycocholate appears to affect cytoplasmic material more than does sodium taurocholate, though both affect nuclear material about equally.

74. **Rate of Urea Excretion.**—In thirty-nine experiments on young healthy adults Addis and Watanabe found that no evidence of variability in kidney action could be obtained in the work of excreting preformed urea added to a constant diet. It is concluded therefore that the normal kidney under constant conditions is characterized by the possession of a high degree of constancy of function.

## Journal of Cutaneous Diseases, Boston

*October, XXXIV, No. 10*

77 *Syphilis of Nervous System. J. A. Fordyce, New York.—p. 713.
78 Case of Atrophy of Fatty Layer of Skin, Preceded by Ingestion of Fat by Large Phagocytic Cells—Macrophages. T. C. Gilchrist and L. W. Ketron, Baltimore.—p. 728.
79 *Exudative Diathesis and Study of Acetone Bodies in Blood of Nine Cases. M. F. Engman and R. S. Weiss, St. Louis.—p. 739. To be continued.
80 Lichen Planus Accompanied by Bleb Formation. D. W. Montgomery, San Francisco.—p. 748.
81 *Differential Blood Counts in Parasitic Skin Diseases and Their Possible Significance. A. Strickler, Philadelphia.—p. 752.

77. **Syphilis of Nervous System.**—All patients at the end of the first year of their infection, Fordyce says, should be punctured whether or not they have manifestations or positive signs of the disease. If the fluid remains negative to all of the tests, they can be assured with a reasonable amount of certainty that they are not menaced by the possibility of a later development. Furthermore, a positive colloidal gold test with a persistent positive Wassermann, in the high dilutions, points to an impending paresis, whether or not the patient shows mental impairment. In other words, years before the stigmata of degeneration appear, the pathologic process is at work in the central nervous system. When

the clinical symptoms of paresis develop, like memory, speech, hand-writing defects, etc., the disease has already existed for years. This statement also applies to tabes. The results obtained in the treatment of tabes would seem to confirm the hypothesis that this affection is primarily an inflammatory process involving the meninges, rather than a degenerative process, for if the latter assumption were correct benefit from the treatment could not be derived.

79. **Acetone Bodies in Blood.**—Engman and Weiss claim that the exudative diathesis should be recognized as a clinical entity. It is hereditary and congenital and whole families may show evidences of it. The main symptoms are respiratory and dermal (parts exposed to trauma). Eosinophilia is very frequently found. The treatment is essentially protective and dietetic.

81. **Differential Blood Counts in Parasitic Skin Diseases.**—According to Strickler there is an increase in the blood of the small lymphocytes in ringworm of the scalp. The average count for sixty cases was 37.4 per cent. of lymphocytes. In the small lymphocytes 20 per cent. did not show any increase. There is a slightly greater increase in the small lymphocytes in those patients treated by vaccines, than in those patients receiving local treatment only. This difference is, however, small. Pediculosis of the body, unlike scabies and grain itch, does not show any change in the blood picture from that seen in the average normal patient. In the four cases of favus studied, there seemed to be an increase of small lymphocytes, but the cases are too few to permit of any conclusions.

### Kansas Medical Society Journal, Topeka

*October, XVI, No. 10*

82 Newer Anesthetics in Labor. G. C. Mosher, Kansas City, Mo.—p. 281.
83 Stricture of Esophagus; Report of Case. W. A. Wehe, Topeka. —p. 289.
84 Case of Tinea Barbæ Clinically Suggestive of Actinomycosis. R. L. Sutton, Kansas City, Mo.—p. 291.
85 Safe Way to Remove Tonsils of Small Children. T. L. Higginbotham, Hutchison.—p. 295.

### Maine Medical Association Journal, Portland

*October, VII, No. 3*

86 Digitalis Therapy. F. S. Meara, New York.—p. 69.

### Medical Record, New York

*October 14, XC, No. 16*

87 Tuberculosis Survey of Alaska Eskimo Village — Using Children Under Fifteen Years of Age as an Index. H. C. Michie, U. S. Army.—p. 663.
88 Present Status of Chronic Multiple Arthritis, with Special Consideration of Infection as Etiologic Factor. G. R. Elliott, New York.—p. 666.
89 Ragweed Pollen in Nasal Secretion of Hay-Fever Cases. W. Scheppegrell, New Orleans.—p. 672.
90 Significance of Increased Duodenal Dilatability. W. H. Barber, New York.—p. 673.
91 Intermaxillary Splint. G. M. Dorrance, Philadelphia.—p. 674.
92 Apparatus for Direct and Continuous Transfusion of Blood. A. Kahn, New York.—p. 675.
93 Recurrent Acrodermatosis of Warm Countries. R. Ruiz-Arnau, San Juan, Porto Rico.—p. 677.
94 Treatment of Wounds. L. Sexton, New Orleans.—p. 680.

*October 21, No. 17*

95 Management of Poliomyelitis, with View to Minimizing Ultimate Disability. R. W. Lovett, Boston.—p. 705.
96 Roentgen Diagnosis of Tuberculosis of Lungs. H. Hulst, Grand Rapids, Mich.—p. 712.
97 Medical Mind. J. M. Putnam, Buffalo.—p. 718.
98 Treatment of Flat-Foot in Old Patients. S. Epstein, New York. —p. 720.
99 *Cardiac Crises in Tabes Dorsalis; Report of Case with Sudden Death. M. F. Lautman, Hot Springs, Ark.—p. 722.
100 Late Infection Following Corneoscleral Trephine Operation for Glaucoma. C. B. Broder, New York.—p. 723.

99. **Cardiac Crises in Tabes Dorsalis.**—In a man with advanced taboparesis there occurred attacks of pain about the heart, in the nature of cardiac crises. There were no postmortem evidences to explain the sudden death which occurred in one of the paroxysms, which renders quite plausible the assumption that death was due to a cardiac crisis. The valves, as well as the coronary arteries throughout their entire extent, showed no abnormalities. The aorta, with the exception of three small atheromatous, calcified plaques on the posterior wall, just above the ring, was negative. In addition, the capsule of the liver showed a few cicatrices, there was a Meckel's diverticulum, and there were only two lobes in the right as well as the left lung.

### Nebraska State Medical Journal, Omaha

*September, I, No. 3*

101 Surgical Pathology and Operative Technic of Duodenal and Gastric Ulcer. J. S. Welch, Lincoln.—p. 67.
102 Etiology and Pathology of Gastric and Duodenal Ulcers. A. C. Stokes, Omaha.—p. 72.
103 *Possible Predisposing Factor in Etiology of Duodenal Ulcer. C. A. Roeder, Omaha.—p. 76.
104 Diagnosis of Gastric and Duodenal Ulcer. A. D. Dunn, Omaha. —p. 78.
105 Treatment of Gastric Ulcer. L. Crummer, Omaha.—p. 81.
106 Case of Adenocarcinoma of Lung. G. W. Covey, Lincoln.—p. 82.
107 Operative Treatment of Cancer by Actual Cautery. J. E. Summers, Omaha.—p. 86.
108 Remote Effects Following Oral Infections. L. M. Stearns, Kearney. —p. 90.
109 Smallpox Ulcer of Cornea. J. L. Sutherland, Grand Island.—p. 92.

103. **Etiology of Duodenal Ulcer.**—Traction on the bulb or first portion of the duodenum when the dilated segment or stomach is filled, Roeder says, may have some bearing in the etiology of duodenal ulcer. The first portion of the duodenum or bulb suspends more weight after meals than any other portion of the gastro-intestinal tract at any time, with the possible exception of the area surrounding the cardiac orifice. There is constant traction on this first portion of the duodenum for one or two hours after eating; particularly so in those who cannot afford the luxury of the reclining posture for at least one hour after a hearty meal. During spring and fall the laboring man works hardest and eats most and going to work on a full stomach with considerable traction on the bulb, Roeder says, may account for the seasonal exacerbations so characteristic of this lesion.

### New York Medical Journal

*October 14, CIV, No. 16*

110 Postfebrile Treatment of Anterior Poliomyelitis. D. D. Ashley, New York.—p. 725.
111 Epidemic Poliomyelitis. W. S. Bryant, New York.—p. 727.
112 Intracranial Murmur of Long Duration and Spontaneous Cessation. F. K. Hallock, Cromwell, Conn.—p. 729.
113 Pelvic Inflammation. H. M. Armitage, Chester, Pa.—p. 730.
114 Chronic Renal Infarcts, Nephrectomy; Case Report. N. P. Rathbun, New York.—p. 734.
115 Extra-Uterine Gestation. E. P. Lothrop, Buffalo.—p. 735.
116 Status Lymphaticus. W. L. Culbert, New York.—p. 739.
117 Cystoscopic Rectovesical Transillumination. P. S. Pelouze, Philadelphia.—p. 740.
118 Obstetric Abdominal Hysterotomy; Report of Twelve Cases. A. M. Hellman, New York.—p. 741.

### Northwest Medicine, Seattle, Wash.

*October, XV, No. 10*

119 Physicians' Defense and Defensible Physician. W. Kuykendall, Eugene, Ore.—p. 319.
120 Questions of Interest to the Profession. E. W. Whitney, Salt Lake City.—p. 323.
121 Case of Primary Syphilis of Eye. W. G. Cameron, Tacoma.—p. 328.
122 Window Resection of Larynx for Removal of Intrinsic Malignant Disease. F. Adams, Seattle.—p. 330.
123 Mastoiditis Complicated with Brain Abscess. Operation and Recovery; Report of Case. P. B. Wing, Tacoma.—p. 332.
124 Thyroglossal Tumor (Aberrant Thyroid); Report of Case. W. K. Seelye, Seattle.—p. 334.
125 Plea for Earlier Operation of Strabismus or Squint. E. B. Burwell, Seattle.—p. 335.
126 Ultimate Nervous Results of Acute Angulation and Flexure of Sigmoid and Consequent Fecal Stasis. Eczema Madidans; Report of Eight Cases. W. H. Axtell, Bellingham.—p. 337.

### Philippine Journal of Science, Manila

*March, XI, No. 2*

127 Bacteriologic Examinations of Swimming Pools in Manila. C. E. Gabel, Manila.—p. 63.
128 *Wassermann Reaction with Glycerinated Human Serum. E. H. Ruediger, Manila.—p. 87.

128. **Wassermann Reaction with Glycerinated Human Serum.**—This, Ruediger's second report, deals with serums tested monthly for a period of three months. The serums had not become anticomplementary. There was practically no

difference between the first and second readings. All serums remained clear and free from bacterial growth. A few cubic centimeters of each of these serums remain and Ruediger expects to report on them at intervals of a year.

### Vermont Medicine, Rutland

*August, I, No. 8*

129 Some Fundamental Causes of Disease. W. S. Bainbridge, New York.—p. 217.
130 Rectal Anesthesia and Demonstration of Gwathmey's Method. W. M. Johnson, New York.—p. 224.

## FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

### Indian Medical Gazette, Calcutta

*September, LI, No. 9*

1 Reflections on Cataract Extraction. E. A. R. Newman.—p. 321.
2 Eye-Strain. M. Corry and H. Shanker.—p. 324.
3 *Value of Quinoidin in Malaria. E. E. Waters.—p. 335.
4 Cholera Inoculation Carried Out on Northwest Frontier, 1915. M. A. Nicholson.—p. 338.
5 Double Inguinal Hernia. N. K. Basu.—p. 340.
6 Epigastric Hernia in Sepoys. N. W. Mackworth.—p. 340.

3. **Value of Quinoidin in Malaria.**—It appears that in India quinoidin is being used in large quantities in the treatment of malaria. It is not only effective but it is cheap. Waters says that it is a splendid prophylactic. In August, 1914, a spleen census was taken of the boys attending four higher and middle English schools. Of 402 boys, 136 were found to have palpable spleens of various sizes. Quinoidin tablets were issued freely and administered regularly by the school head master from August to January. When the same boys were examined again in February, 1915, enlarged spleens were found in twenty-eight only—a drop from 33 to 7 per cent. A similar examination was made of some 700 children in 1915, and the spleen index fell from 14.4 to 8 per cent.

For ordinary acute malaria and outpatient work 12 to 16 grains daily are generally sufficient, says Waters. More may safely be given, especially in chronic and spleen cases, less is often effectual. It is important that a preliminary purge be administered. With inpatients the first day is usually occupied by necessary blood and urine examinations, the purgative, and so on, giving a simple diaphoretic, if necessary. On the second and subsequent days two 2-grain tablets of quinoidin are given twice daily and this is sufficient in the vast number of cases to bring the temperature down to normal or nearly normal by the third or fourth day—say a total dosage of 36 to 48 grains. In chronic cases with enlarged spleens, or in malignant tertian infections, Waters prefers to combine ammonium picrate, half a grain, and arsenious acid, $\frac{1}{100}$ grain. Beginning with 12 daily this can generally be increased up to 24 daily without intestinal or arsenical symptoms. Quinoidin is slightly more lethal to guinea-pigs than quinin. Properly administered, it is at least as effective as quinin, and causes no cinchonism or gastric trouble.

### Practitioner, London

*October, XCVII, No. 4*

7 Alleged Incontinence of Urine and Malingering. J. Collie.—p. 301.
8 Some Medicolegal Points in Connection with Death. W. A. Brend. —p. 312.
9 Surgical Judgment. J. H. Watson.—p. 323.
10 Recent Public Health Work. J. Priestley.—p. 336.
11 Recent Work in Tropical Diseases. R. T. Hewlett.—p. 351.
12 Renal Excreta; An Examination of Some Fallacies and Facts. E. Wooton.—p. 363.
13 *Continuous Counter Irritation as Therapeutic Measure in Rheumatoid Arthritis, Etc. W. J. Midelton.—p. 371.
14 Valvular Disease of Heart in Army Recruits and Soldiers Proposed for Invaliding. S. Wyard.—p. 377.
15 *Sublingual Medication. W. Paulson.—p. 389.
16 Case of Egg Poisoning (Anaphylaxis). R. S. C. Edleston.—p. 391.

13. **Continuous Counter Irritation in Rheumatoid Arthritis.**—Not only are changes in the spinal cord beneficially influenced, but, Midelton says, the whole system improves when continuous counter irritation is properly carried out for a sufficient period in rheumatoid arthritis. Among other improvements he has noted the following in a sufficiently large number of cases to be beyond any possible question of their being mere coincidence: Pain and swelling have gone from joints, and movement has greatly increased. Wasted and contracted muscles have thickened, elongated and become more powerful. Pads and fringes in the interior of joints have so diminished as no longer to cause pain or limitation of movement. Fibrous and semifibrous thickenings of all kinds, such as adhesions, nodules and lipomas have disappeared; in some cases, the nodules have been as hard to the touch as wood. Deformities of arms, legs, toes and fingers have greatly lessened. Eruptions of many kinds on the skin, as well as discolorations have cleared up. "Wooden" facial features have become normal. Sleep, appetite, digestion and action of the bowels have greatly improved, and so have sight, hearing, taste and smell. The mental capacity, too, greatly increases and morbid thoughts of all kinds either diminish or go completely.

Skilfully and carefully carried out, the treatment is without serious risk, and sepsis plays no part in it. The three methods employed by Midelton are: (1) the blister, followed by savin ointment; (2) multiple superficial acupuncture (thousands of punctures are made at each sitting), followed by irritants. Midelton paints over the punctured area a mixture of croton oil, cantharides and almond oil. The mixture is carefully proportioned in order to produce an eruption only and no blisters; (3) the galvanocautery. This is chiefly applied to the back near the spine. Small dots or dashes are made, the number being arbitrary and given according to the needs of each patient.

15. **Sublingual Medication.**—For the absorption of concentrated remedies (unchanged and uncontaminated) directly into the circulation, Paulson regards the sublingual space as the most reliable surface in the whole body. The only preparation necessary is rinsing with water, if the mouth is dry. For the relief of severe pains, such as those of renal or biliary calculi, and on many other occasions, both in military and ordinary practice, the method is said to be of incalculable service.

### Bulletin de l'Académie de Médecine, Paris

*September 19, LXXVI, No. 37, pp. 203-210*

17 *Injury of the Ear from Explosions Nearby. (Les mutilations de l'organe auditif par les détonations; leurs véritables causes; moyens pratiques de les éviter.) Wicart.—p. 204.
18 Typhus in Serbia in 1914 and 1915. (Considérations épidémiologiques et cliniques sur l'épidémie de typhus exanthématique au cours de la guerre actuelle en Serbia.) Petrovitch.—p. 206.

17. **Injury of the Ear from Explosion.**—Wicart insists that the air concussion from an explosion induces as a rule merely transient and curable disturbances in a previously normal ear. Chronic ear trouble or old healed otitis materially aggravates the effects of the air concussion. In many cases the disturbances from the concussion are prolonged or aggravated by some constitutional trouble, syphilis, malaria, autointoxication, etc. Treatment of the constitutional trouble relieves and may cure the ear disturbances, associated with local measures to soothe the swollen mucosa in the nose, pharynx and eustachian tubes, and soften and mobilize the tympanic membrane. He advises to fill the ear with cotton wet with glycerin to prevent contusion of the tympanic membrane, and to wear ear muffs padded with cotton. Swallowing two or three times, with the nostrils pinched together with the fingers, helps to hold the tubes open at the moment of the explosion. Infection comes by way of the tubes or outer ear, and hence he urges systematic hygiene and sterilization of the ear and nasopharynx to keep the ears in good condition in prophylaxis. See also Paris Letter in THE JOURNAL, p. 1314.

### Lyon Médical

*September, CXXV, No. 9, pp. 369-416*

19 *Juxtacardiac Gastric Ulcer; Four Cases. Guérin.—p. 369.
20 Diabetes in Old Syphilitic Cured Apparently by Mercurial Treatment. Revillet.—p. 374.

19. **Ulcer of the Stomach Near the Cardia.**—In Guérin's four cases the ulcer was on the upper part of the lesser curvature, involving the posterior rather than the anterior wall

of the stomach. In three cases its removal was not attempted, but in the fourth case the region was easily excised notwithstanding adhesions to the pancreas. The abdominal portion of the esophagus seems to be longer in women than in men, so that juxtacardial ulcers are more accessible. As adhesions are liable to prevent radical measures, it is important to act promptly, but the diagnosis is not an easy matter in these cases. The patient feels merely vague pains between the shoulders at first, and a little pain on swallowing certain kinds of solid or fluid foods. Gradually these symptoms become more pronounced. The interscapular pain becomes continuous, and the patient, to spare himself this discomfort, eats less and less, until the emaciation is extreme. Pain in the epigastrium is rare. Only one of the four had cramps in the stomach an hour after eating. It subsided after regurgitation. There is no vomiting of the esophageal type but there may be occasionally vomiting of the pyloric type. There is constipation and the stools are blackish, with occult blood. The ulcer is hidden behind the costal arch, and radioscopy proved constantly negative in his cases.

## Le Nourrisson, Paris

*IV, No. 5, pp. 257-320*

21 Partitioned Off Meningitis. (Formes cloisonnées et ventriculaires de la méningite cérébro-spinale. Ependymite meningococcique évoluant en cavité close.) A. B. Marfan.—p. 257.
22 Chemical Study of Woman's Milk and Clinical Deductions. (Lait de femme.) R. Raimondi.—p. 269.
23 Infantile Tuberculosis and Intradermal Tuberculin Treatments. L. Jeanneret.—p. 283.
24 Tetany in Infant nearly Two with Inherited Syphilis, the Parathyroids Apparently Normal. (Spasme de la glotte et convulsions généralisées avec du facial chez un enfant atteint de rachitisme syphilitique. Intégrité microscopique des glandes parathyroides.) A. B. Marfan.—p. 291.
25 Acute Lobar Pneumonia in Eighteen Months Infant Simulating Meningitis. Lavergne.—p. 295.

## Paris Médical

*September 23, VI, No. 39, pp. 257-272*

26 *Agar in Antiseptic Dressing of Wounds. (Le pansement antiseptique à l'agar-agar.) M. Loeper and P. Barbarin.—p. 257.
27 *Radiotherapy of Peripheral Tuberculous Glands. E. Albert-Weil.—p. 260.
28 Bone Graft Surgery. (Une méthode nouvelle de greffe osseuse dans la pseudarthrose. Méthode d'Albee de New York.) J. Calvé and M. Galland.—p. 264.
29 Military Status of Tuberculous Soldiers. (Des tuberculeux et de leur situation militaire.) A. Lanzenberg.—p. 268.

26. **Agar for Dressing Wounds.**—Loeper and Barbarin expatiate on the advantages of pads of agar, or agar tied in the center of a square of gauze, to apply to wounds. It is exceptionally compressible and elastic while it absorbs eight times its weight of water, and dries extremely slowly. Its absorbing power is so great that microbes and leukocytes accumulate in it when used as a dressing. It spreads the walls of the wound apart and with the projecting ends of the square of gauze serves as a perfect drain. They have found this very useful to supplement the Carrel-Dakin method of treatment, running the tube down into the sachet, as they call the sugar teat arrangement of agar and gauze. Agar is not a culture medium for germs.

27. **Roentgen Treatment of Tuberculous Glands.**—Weil declares that there are no tuberculous adenopathies which are not suitable for Roentgen-ray treatment. In his experience with fifty cases he has had no failures. He uses large doses, but fractions them, and divides the skin over the region into as many areas as necessary to expose the whole of the gland, giving a total of from 10 to 14 H. units at each portal of entry, filtering through 4 mm. aluminum. This usually takes five or six days. He gives illustrations of a number of cases showing how the adenopathy retrogresses even when of months' standing. He clears out the fistula and suppurating focus first, but the merely inflamed glands, without suppuration, do not require this.

## Presse Médicale, Paris

*September 21, XXIV, No. 52, pp. 413-420*

30 *The Agglutination Test in Typhoid and Paratyphoid, in the Vaccinated and the Nonvaccinated. (L'épreuve de la saturation des agglutinines.) C. Gautier and R.-J. Weissenbach.—p. 413.
31 *Trephining the Lateral Ventricle in Protracted Form of Meningitis. Neveu-Lemaire, Debeyre and Rouvière.—p. 415.

*September 25, No. 53, pp. 421-428*

32 *Skull Wounds. (Quelques notes au sujet des plaies pénétrantes du crâne en chirurgie de guerre.) J. Abadie.—p. 421.
33 *Lid Reflex as Test for Deafness. (Note sur l'utilisation du réflexe cochléo-orbiculaire pour la surdité.) F. Gault.—p. 424.

30. **Agglutination in Typhoid and Paratyphoid.**—This article is based on the findings in 226 cases in which the agglutination test was supplemented by testing for saturation of the agglutinins. To avoid error, it is necessary to compare the agglutinating limit for all three bacteria, the typhoid and the paratyphoid A and B. The laboratory findings must be interpreted by the light of the history of the case, stage of the disease and previous vaccination. A single negative response is not decisive. Anomalous findings are explained by mixed infections but even then the serodiagnosis is useful, showing the necessity for supplementary investigation.

31. **Trephining Lateral Ventricle in Meningitis.**—The case reported shows the necessity for relieving the walled-off focus in the ventricle when, after the patient seems to be well on the way to recovery, severe symptoms return with others showing pressure on the brain. The technic for puncture of the lateral ventricle is described in detail; the operation is said to be rapid, easy and seemingly free from danger. Hesitation and abstention are relics of the old exaggerated dread of touching the brain. The earlier the relief is given the better the results. The apparently doomed child was rescued by the trephinopuncture in the frontal portion of the right lateral ventricle. This avoids the superior longitudinal sinus and the anterior branch of the middle meningeal artery. The needle was held slanting downward, inward and backward. It was introduced for about 4 cm. and after 35 c.c. of fluid had escaped, about 15 c.c. of antimeningococcus serum were injected.

32. **Skull Wounds.**—In reviewing his experiences in 127 skull wounds, Abadie mentions that only three of the men required a subsequent operation. His method of early trephining and puncture gives durable results. The number of men with skull wounds reaching the hospital is much larger this year than last. This fact is regarded as testifying to the protection afforded by the metal helmet. Without this more men would have been killed outright. He operates without assistance, except the aid of an automatic retractor, and punctures even the intact dura mater if it is stretched or unduly depressible. Seventeen illustrations accompany the article.

33. **Instructive Reflex in Testing Deafness.**—Gault's experience has convinced him of the functional nature of the trouble in many men apparently irretrievably deafened by a nearby shell explosion. In sifting out these cases he has been impressed with the diagnostic value of excitation of the facial nerve and, especially, of the orbicular muscle of the eyelids. A bicycle horn is blown suddenly 6 feet from the ear while the eyelids are being watched under a magnifying glass. The sudden impression on the auditory nerve elicits a reflex contraction of the orbicularis palpebrarum, impossible to mistake. This cochlea-eyelid reflex thus denotes that the deafness is psychic in nature and hence curable if treated in time and in the proper environment.

## Correspondenz-Blatt für Schweizer Aerzte, Basel

*September 16, XLVI, No. 38, pp. 1185-1216*

34 War Injuries of the Visual Apparatus. (Kriegsschädigungen der Sehorgane.) P. Knapp.—p. 1185.
35 The Question of Specialists from the Standpoint of Sickness Insurance. (Zur Spezialistenfrage. Beitrag zur Praxis des schweizerischen Krankenversicherungsgesetzes.) A. Nordmann.—p. 1201.

*September 23, No. 39, pp. 1217-1248*

36 *Autolysate Treatment of Cancer. (Ueber einige Ergebnisse aus dem Gebiete der Krebsforschung, mit bes. Berücksichtigung der Autolysattherapie.) R. Klinger.—p. 1217.
37 The Campaign against Quackery in Switzerland. (Der Kampf gegen das Kurpfuschertum in der Schweiz.) H. Hunziker.—p. 1230. Translated for Miscellany.

36. **Autolysates in Treatment of Cancer.**—Klinger remarks that the questions of a predisposition to cancer and immunity

have been illuminated to some extent by recent research, especially on mouse tumors. A tendency to be susceptible or to be refractory may be inherited, and experimental cancer research to a large extent is now study of immunity problems. The effort to induce immunity has led to treatment with autolysates, although the phenomena of and bases for the latter differ in many points from immunity processes. The results of Klinger's own research and experience confirm the possibility of influencing the growth of a tumor by injecting certain products of the breaking down of albumin. These autolysates supply the body with ready-made ferments while at the same time exerting a stimulating action on the blood-producing tissues, whipping them up to increased production of the tumor cell-destroying substances. As cancers consist essentially of albuminoid substances, it seems evident that their retrogression and absorption depend on the intensification of certain disintegration processes. No means is known of isolating the different albumin building stones from a mixture of them, but Herzfeld's method of quantitative determination of the bodies reacting to ninhydrin enables us to determine the intensity of the disintegrating power of such a mixture, and to compare different ones with each other. This method provides an objective measure of the "wrecking" efficiency of autolysates used for therapeutic purposes. Autolysates from the various organs of the same animal may have widely differing disintegrating power as is shown by an experiment related.

The process is a chemical one, and the therapeutic results that have been attained with autolysates are encouraging although not brilliant. Quite a number of cases have been reported of complete cures or essential improvement under autolysate treatment of previously inoperable cancers. In Bertrand's case an extensive recurrence of a mammary cancer was completely cured. On suspension of the treatment after several months of the daily injections, the tumor began to grow again. The resumption of growth on suspension of the treatment apparently shows that the cure was not a spontaneous subsidence of the tumor but was actually the work of the treatment. Such brilliant results are exceptional, but even in the only improved cases the inflammatory infiltration may subside and the tumor may cast off necrotic masses, the edges of the ulceration healing over. Cancers bleeding and suppurating profusely may have the bleeding and secretion arrested. The tumor often grows so much smaller that the esophagus or rectum may become permeable once more. Pains caused by the infiltration subside as this retrogresses. In many cases the growth becomes operable after a few weeks of autolysate treatment.

The failures are due to some extent to the use of ineffective extracts. They should have their proteolytic power tested both quantitatively and qualitatively in vitro, and efforts should be made to discover substances which have the strongest proteolytic action on tumor albumin. The action on the tumor is not dependent on any general reaction, and hence solutions should be selected which elicit the fewest by-effects. Klinger regards intravenous injection as the most effectual route. There does not seem to be any danger of anaphylaxis, he says, but sometimes the autolysates seem to lose their power in time. This can be avoided by changing the material. Klinger gives no details of personal clinical experience with the method, but regards it as justifying further trials, associating with it a diet tending to augment the destruction of albumin: restriction to milk and vegetables, copious drinking of diuretic teas, sweat cures, etc. Teilhaber seeks to stimulate and modify the metabolism by sports, massage, change of air, vegetarian diet, etc., with venesection once a year, withdrawing 400 or 500 c.c. of blood. He has had cases in which an inoperable cancer spontaneously retrogressed after an operation accompanied by much loss of blood. Klinger adds that the lesser activity of the metabolism in the elderly is due not so much to reduced assimilation as to sluggish processes throughout. They work less actively and the body is not flushed so thoroughly with its fluids, but more important than all this is the less active functioning of the glands which regulate the metabolism of albumin (thymus, thyroid and sexual glands).

## Gazzetta degli Ospedali e delle Cliniche, Milan

*September 21, XXXVII, No. 76, pp. 1185-1200*

38 Radioscopy of the Liver and Biliary Passages. (Esame radiologico del fegato e delle vie biliari.) M. Pavesi.—p. 1187.

*September 24, No. 77, pp. 1201-1216*

39 Value of the Electrovibrator in Search for Foreign Bodies. (L'elettro vibratore del Bergonié nella ricerca dei proiettili magnetici.) V. Maragliano.—p. 1201.

40 War Wounds of the Skull. R. Mosti.—p. 1210.

41 The Red Cross and the Military Sanitary Service. E. Villa.—p. 1215.

## Policlinico, Rome

*September 24, XXIII, No. 39, pp. 1143-1166*

42 *Iodoform-Glycerin in Treatment of Tuberculous Pleurisy and Peritonitis. (Il metodo Capparoni nella cura delle pleuriti e peritoniti tubercolari.) C. Antonucci.—p. 1150.

**42. Iodoform-Glycerin in Treatment of Tuberculous Pleurisy and Peritonitis.**—Antonucci has been applying local treatment with a 20 per cent. suspension of iodoform in glycerin and reports satisfactory and even amazing results in some of the twelve cases of pleurisy and seven of peritonitis. All have kept in good health since. The iodoform and the glycerin are sterilized separately; he used from 2 to 4 gm. of the iodoform in 10 to 20 gm. of glycerin restricting the patients to milk at the time. He does not aspirate any effusion that may be present unless compelled by circumstances, and he made only one injection. There was generally a febrile reaction and in some cases albuminuria. One young woman with pains in the abdomen, fever and night sweats for about three months, with ascites, threw off all symptoms after the injection of 4 gm. of iodoform in 20 gm. glycerin. The abdomen seems to be normal and three months afterward the patient was apparently in the best of health, general and local. In one of the peritonitis cases, two injections were given. The fluid was aspirated out in only one case as he does not wish to deprive the body of the antibodies it has been developing. The reabsorption of the fluid acts as a form of autoserotherapy. The outcome was most gratifying in two peritonitis cases given only 2 gm. of iodoform. As the patients recovered they were given a course of heliotherapy or radiotherapy, with tonics, usually arsenic and iodin. He never had any mishaps, but refrains from giving this treatment when heart or kidneys are below par.

## Riforma Medica, Naples

*XXXII, No. 1, pp. 1-28*

43 The Pitch as Element in Stethoscopic Sounds. (Dell rapporto di altezza fra suono inspiratorio ed espiratorio nel respiro vescicolare e nel respiro bronchale fisiologico e patologico.) A. Martiri.—p. 10.

*No. 25, pp. 669-696*

44 *Bile-Producing Influence of Methyl Salicylate. (Influenza dell' etere metilsalicilico sulla biligenesi.) G. Leone.—p 669.

45 *Pathologic Import of Toe Reflex. (Su di un reflesso particolare e pathologico dell' alluce. Il fenomeno della seconda falange.) P. Boveri.—p. 674.

46 Hypochlorous Acid in Treatment of War Wounds. (Asepsi ed antisepsi in chirurgia di guerra.) N. Giannettasio.—p. 676. Continued.

**44. Influence of Methyl Salicylate on Production of Bile.**—Leone's experimental work on a guinea-pig has apparently established that this drug has the power to increase materially the amounts of bile secreted and of its total solid residue. The bile soon after ingestion or subcutaneous injection of the drug is more fluid, but the osmotic tension and electric conductibility are higher as the total dry residue and ash increase. Six series of experiments at intervals of one or two months were made on the guinea-pig, kept all the time on a constant diet and showing no change in weight. The bile output increased much more, proportionately, after a dose of 1 gm. than after a quarter of this dose.

45. **Toe Reflex.**—Boveri relates that if the patient lies prone, on his stomach, with legs held straight up in the air, feet at right angles to the leg, thus outlining almost a Z, attempts to elicit the Achilles tendon reflex may fail and another reflex may be elicited in its place, the bending of the second phalanx of the big toe. Study of the cases in which this toe reflex occurs shows that it does not occur in the normal or when the Achilles reflex can be elicited. It seems to be restricted to cases of injury of the spinal cord, spinal

nerve roots or sciatic nerve. The men presenting this reflex had been wounded in the spinal roots or sciatic nerve, mostly the latter. The percussion must be applied directly to the Achilles tendon. In cases with complete section of the sciatic nerve this reflex did not occur, and its appearance later was a sign of improvement. It seems to accompany only a partially destructive process. He suggests a theoretical explanation for this reflex, and describes some typical cases in which it occurred.

### Semana Medica, Buenos Aires

*August 3, XXIII, No. 31, pp. 107-128*

47 Climate in Treatment of Tuberculosis in Argentina. (Consideraciones sobre climatoterapia Argentina en la tuberculosis.) P. A. Guerrero.—p. 107.

48 Care of the Newborn of Mothers Still Minors. (La proteccion y asistencia social del recien nacido, hijo de menores, sujetas a la tutela del Ministerio Publico.) U. Fernandez.—p. 111.

49 A Suit for Medical Fees. (Demanda por honorarios medicos. Laudo arbitral.) P. B. Aquino.—p. 114.

### Siglo Medico, Madrid

*September 16, LXIII, No. 3275, pp. 593-608*

50 Hemostatic Action of Emetin. (Sobre la accion hemostatica de las sales solubles de emetina.) F. F. Martinez.—p. 595.

### Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

*September 23, II, No. 13, pp. 1085-1172*

51 *Cause of Laxative Action of Whole White Mustard Seed. (Verklaring van de laxeerende werking van witte-mosterdzaad.) E. C. van Leersum.—p. 1085.

52 *Care of Crippled Children. (Zorg voor gebrekkige kinderen.) J. van Assen.—p. 1095.

53 *Tumors from Presence of Spiroptera in Rat Stomachs. (Over wormgezwellen in de maag van de rat.) W. F. Wassink.—p. 1108.

54 *Diagnosis of Intestinal Parasites. I. Bak.—p. 1117.

55 *Poisonings in the East Indies. (Vergiftiging in Nederlandsch Indie.) M. D. Horst.—p. 1122.

56 *Case of "Febris Uveo-Parotidea." H. W. Leeksma.—p. 1126.

**51. Mustard Seed as Laxative.**—Van Leersum refers to whole white mustard seed which has long been currently used for a laxative in some countries. He had been investigating its laxative action as a mucilaginous seed when he noted the odor of sulphuretted hydrogen in a vial containing the water in which mustard seed had been placed the day before. The gas bubbles accumulating on the inside of the vial contained more or less sulphuretted hydrogen. Mustard seed is mentioned as a popular laxative by W. Cullen in the eighteenth century. Its efficacy is probably due to this generation of sulphuretted hydrogen and also of carbon dioxid, which stimulate bowel functioning. This explains also the cyanosis in the cases of poisoning from mustard seed. So long as the gas is harmlessly eliminated by the lungs there is no disturbance.

**52. Outlook for Crippled Children.**—Van Assen discusses the condition, treatment and outlook for the seventy-two crippled children in the asylum at Rotterdam. In only nine was the deformity congenital, and in five the result of an accident. The necessity is emphasized for operative and medicomechanical procedures, special arrangements for schooling, and attendants trained in helping cripples. Such a home for crippled children should be located outside of the city. The paralyzed form the main contingent of such cases, and he describes the various orthopedic procedures which he has found most effectual for the different types of deformity. Among the various cases related is one in which epileptic attacks were traced to irritation from the stump after amputation of the upper arm. After excision of the enlarged ends of the severed nerves, the attacks were arrested.

**53. Worm Tumors in the Rat Stomach.**—Wassink has been conducting experimental research on the spiroptera tumors which Fibiger found in the stomach of certain rats, as he reported two years ago (summarized in THE JOURNAL, Oct. 3, 1914, p. 1244). Wassink obtained infected cockroaches from Fibiger and succeeded in reproducing the tumors in rats and also in mice. He also found in native rats a parasite very similar to if not identical with that described by Fibiger as the *Spiroptera neoplastica*. The roaches eat the rat droppings and the larvae of the worms get into their muscles. The rats eat the roaches and thus become infested anew. The Holland parasite, however, does not cause production of a large tumor, as does Fibiger's spiroptera from the West Indies. The results of Wassink's research are a complete confirmation of Fibiger's statements, on a large material, over 1,000 Amsterdam rats and 625 taken from ships arriving from the East Indies or South America, besides numbers of roaches from the same localities.

**54. Diagnosis of Intestinal Parasites.**—Bak has been comparing the various methods in vogue for facilitating the discovery of helminth ova in the stools, including Bass' and McNeil's methods. He tabulates the parallel findings with Telemann's and Yaoita's technics, applied to fresh feces and to feces preserved with a 5 per cent. aqueous formaldehyd solution. He says that the Telemann proved simpler and injured the ova less than Yaoita's, while the Bass method takes too much time and alters the ova too much. He applied Telemann's original technic except that he sometimes poured off the ether and filled up with fresh and centrifuged a second time. The various technics all much facilitated the search for ova and encysted parasites. The ten persons examined had all been for a longer or shorter time in the tropics, but were all supposedly healthy. Only one was found free from helminths and only one specimen of stools was examined in this case. One specimen from another person had 145 lamblia cysts and three ankylostoma ova. Bak remarks in conclusion that the improved and facilitated technic for determining the presence of helminths has revealed their unsuspected prevalence in so many persons that we are liable to be led into the error of incriminating them for every morbid condition for which we cannot readily discover any other cause.

**55. Poisonings in the East Indies.**—Horst was at one time physician to the Batavia Petroleum Company and he here relates that poisoning is comparatively frequent among the natives of the East Indies. At nearly every death one hears from some one a hint of foul play. One reason for this, he says, is that many persons have a guilty conscience; another is that the sapping of the vitality by the tropic environment is liable to bring on sudden death in both natives and Europeans. He relates a few cases, including one in which the bursting of an unsuspected liver abscess into the lungs caused symptoms, speedily fatal, resembling those of acute poisoning.

**56. Uveo-Parotid Fever.**—Leeksma adds a fifth to the four cases of this affection on record in accessible literature. Heerfordt called attention to it as a new morbid entity in 1909, swelling of the parotid glands with iridocyclitis, all with a protracted or chronic course for months. In two of his cases there was facial paralysis also on one side. There were no cases of epidemic parotitis in the environment at the time. But in Horst's case there were three cases of mumps in the family developing about a month after the onset of the affection in his patient. It is evident, therefore, he says, that the "febris uveo-parotidea" is merely an atypical form of mumps. That the eye may be affected by the disease is nothing new. Schiess reported a case some time ago of iridocyclitis in actual mumps. Horst calls attention to the fact that in his case the facial paralysis developed on one side after the tumefaction on that side had quite subsided and the other side was swelling. The paralysis therefore could not be ascribed to pressure on the nerve.

### Finska Läkaresällskapets Handlingar, Helsingfors

*LVIII, No. 8, pp. 1169-1296*

57 *Malignant Chorio-Epithelioma. (Till kännedomen om det maligna korionepiteliomet.) O. Engström.—p. 1169.

58 Structure of Connective Tissue. I. (Strukturförhållanden i s. k. myxomatös bindväf.) H. Eklöf.—p. 1203.

59 *Tuberculosis in Sawmill Workers. (En undersökning af tuberkulosens förekomst vid Trävaruaktiebolaget Kemi's sågar.) H. Snellman.—p. 1242.

60 Resection of Congenitally Excessively Large Tongue. (Om den kongenitala makroglossien.) Y. Meurman.—p. 1258.

**57. Malignant Chorio-Epithelioma.**—Engström has previously reported five cases of malignant chorio-epithelioma of the uterus and he here gives the minute details of a sixth

case. There were metastases in the pelvis, liver and left lung, and notwithstanding removal of the uterus and adnexa and part of the pelvic cellular tissue, the woman succumbed four months later. There had been an interval of four years since her last, the fifth, pregnancy. Engström queries whether it is possible for fetal cells to lie latent for four years in the uterus before developing chorio-epithelioma. He cites a number of cases from the literature which apparently confirm the possibility of a long latent period. In McCann's case there was supposed to be an interval of nine years. None of the cases reported, however, stands criticism, so that there is no evidence to date that ectodermal cells can lead a slumbering existence in the uterus or elsewhere in the maternal organism for months or years. Some unsuspected pregnancy, terminating in abortion at such an early stage that it escapes notice, is probably responsible for it.

59. **Tuberculosis Among Sawmill Workers.**—A large sawmill concern in northern Finland commissioned Snellman to investigate conditions in regard to tuberculosis among the employees and their families. He found pulmonary tuberculosis in 3.95 per cent. of the 2,408 persons, and glandular tuberculosis in 2.28 per cent. This total included 1,135 women, and 8.05 per cent. of them presented signs of tuberculosis. The research demonstrated anew the danger from tuberculous older persons in the family. Measles and whooping cough, especially when they occur in the same child, seem to have a predisposing influence for tuberculosis. No decisive influence from dental caries on the incidence of glandular tuberculosis could be detected.

## Hygiea, Stockholm

*LXXVIII, No. 17, pp. 1281-1392*

61 **The System and Results of Regular Medical Inspection of Prostitutes at Stockholm.** (Till frågan om den sanitära övervakningen av de prostituerade.) U. Müllern-Aspegren.—p. 1281.

62 *Multiple Aneurysms of the Pulmonary Artery with Other Vascular Anomalies in Young Woman. G. D. Wilkens.—p. 1307.

63 Congenital Ocular and Facial Paralysis. (Ett fall av medfödda rörlighetsdefekter inom hjärnnervernas område.) G. Kahlmeter. —p. 1321.

62. **Multiple Aneurysms in the Pulmonary Artery.**—The young woman whose case is described was under observation for six years. She presented a number of uncommon vascular anomalies. Roentgen-ray shadows in the thorax were assumed to be tuberculous foci and necropsy proved that this was the fact for some of them, but others were found to be shadows from distended portions of arteries.

## Svenska Läkaresällskapets Handlingar, Stockholm

*XLII, No. 3, pp. 647-1480. E. Müller Festskrift. Last indexed May 27, 1916, p. 1752*

64 *Torsion and Incarceration of Parovarian Tumor at Seventh Month of Pregnancy. E. Ahlström.—p. 647.

65 *Mercury Stomatitis in Rabbits. (Den experimentella kvicksilverstomatiten hos kaniner.) J. Almkvist.—p. 652.

66 Successful Removal of Otogenous Abscess in Temporal Lobe with Aphasia. N. Arnoldson.—p. 667.

67 Correlation Between Two Variables Determined by Two Superposed Numbered Papers. (Om en ny metod att på grafisk väg borttaga korrelation mellan två variabler.) G. Backman.—p. 673.

68 Physiology of Cell Fission. (Om celldelningens fysiologi.) E. L. Backman.—p. 684.

69 Origin of Congenital Atresia of the Duodenum. H. Berglund.—p. 703.

70 Evolution of the Infraseptal Nasal Gland in Rodents. (Om gnagarnas glandula nasalis infraseptalis och dess utveckling.) I. Broman.—p. 717.

71 Discoverer of Thrush Fungus. (F. T. Berg och prioriteten till torsksvampens upptäckt.) C. Flensburg.—p. 737.

72 *Roentgen-Ray Diagnosis of Bone and Joint Tuberculosis. (Några ord om ben- och ledgångstuberkulosens diagnostik.) G. Forssell. —p. 746.

73 The Descent of the Testicles. (Om könskörtlarnas descensus hos människan.) H. Forssner.—p. 765.

74 Teaching of Anatomy at the University of Lund. (Theatrum anatomicum lundense.) C. M. Fürst.—p. 816.

75 *Congenital Subluxation of the Hip Joint and Its Treatment. P. Haglund.—p. 850.

76 *Microscopic Analysis of the Thymus in Sixteen Cases of Mostly Sudden Death from Internal Causes. (Till vidare belysning av thymusstrukturen vid s. k. thymusdöd.) J. A. Hammar.—p. 867.

77 *Fat Embolism and Diabetic Lipemia. G. Hedren.—p. 933.

78 *Certain Trematodea Infections and Their Importance in the Etiology of Tumors. F. Henschen.—p. 947.

79 Eye Disease in Fishes in Captivity, Probably Traumatic. (Om en ögonåkomma hos hajar och rockor i fångenskap.) S. E. Henschen.—p. 971.

80 Development of the Turtle Lung. (Om sköldpaddslungans utveckling.) C. Hesser.—p. 980.

81 *The Question of Best Treatment of Tracheal Stenosis. G. Holmgren.—p. 1017.

82 Development of Conception of Aphasia. (Historiska notiser i afasiläran.) E. O. Hultgren.—p. 1022.

83 Medicolegal Study of Local Effects of Hanging. (Ett rättsmedicinskt fall: mord eller olyckshandelse, jämte några beräkningar av snarors tryck på halsen vid olika former av hängning.) G. Hultkvist.—p. 1038.

84 Murder or Accidental Throttling in Meshes of Hammock. G. Hultkvist.—p. 1038.

85 Inducing Pneumothorax as Aid in Study of Intrathoracal Tumors; Three Cases. H. C. Jacobæus, E. Lindhagen and E. Key.—p. 1074.

86 Amyloidosis Diagnosed During Life After Puncture of the Spleen. A. Josefson.—p. 1106.

87 Proportionate Size of Different Parts of the Skeleton of Fetuses at Different Stages of Development. (Om storleksförhållandena av vissa skelettdelar från mänskliga foster i olika utveckling.) A. Key-Aberg.—p. 1109.

88 Eventration Through the Diaphragm. A. Lichtenstein.—p. 1116.

89 Shape Assumed by Crystalline Lens During Accommodation. (Till kännedom om linsytornas form vid ackommodation i det mänskliga ögat.) J. W. Nordenson.—p. 1126.

90 Treatment of Stiff Wrist. (Mobilisation av ankyloserade handleder genom resektion och transplantation av bursa præpatellaris.) G. Nyström.—p. 1139.

91 *Toxic Action from Mercury in Treatment of Syphilis. (Några anmärkningar rörande frågan om kvicksilverbehandling mot syfilis — därjämte ett bidrag till den medikamentella kvicksilverförgiftningens klinik.) K. Petren.—p. 1156.

92 The Prehistoric Bones Found in Sussex, 1913. (Om underkäken i Piltdown-fyndet, "Eo-anthropus.") M. Ramström.—p. 1223.

93 The Neuroglia in the Lower Vertebrates. G. Retzius.—p. 1257.

94 Embryonal Arrangement of the Intestines. (Om det normala tarmlägets uppkomst.) T. Rietz.—p. 1273.

95 African Arrow Poison. (Om lulengo.) C. G. Santesson.—p. 1281.

96 White Bile. (Om sammansättningen av den s. k. vita gallan.) J. Sjöqvist.—p. 1293.

97 Variations in Arteries in the Arm. (Till kännedomen om variationerna av armartärerna hos människan.) G. Svensson and P. Wetterdal.—p. 1300.

98 Abdominal Syndromes from Disease of Spinal Roots. (Om radikulära buksyndrom, speciellt motoriska.) G. Söderbergh.—p. 1320.

99 Generalized Myelosis with Tumors in the Skin. J. Tillgren.—p. 1337.

100 Gastric and Duodenal Ulcer from Surgical Standpoint. (Om ulcus chronicum ventriculi et duodeni från kirurgisk synpunkt.) A. Troell.—p. 1343.

64. **Torsion of Parovarian Cyst.**—Ahlström explains the torsion as the result of passage of hard lumps of feces in the rectum, twisting the cyst which had been pushed into the pouch of Douglas by the pregnant uterus.

65. **Mercurial Stomatitis in Rabbits.**—Besides the injury of the mucosa, the mercury and the hydrogen sulphid, infection is necessary before the necrotic stomatitis in rabbits resembles mercurial stomatitis in man.

72. **Diagnosis of Bone and Joint Tuberculosis.**—Forty-nine fine radiograms accompany this article, but Forssell emphasizes that negative Roentgen findings by no means exclude tuberculosis. The chief advantage of Roentgen examination is in cases which are apparently tuberculous but in which some other origin is shown by the rays. A number of instances of this are described, and the special points for differentiation are analyzed as the roentgenograms are compared, especially those showing Köhler's and Schlatter's diseases, dissecting osteochondritis, chronic traumatic arthritis and syphilitic lesions. Future progress in this line will be by minuter persevering study of the roentgenograms in connection with the pathologic anatomic findings and by taking the pictures from more standpoints. Many of the supposed "failures" in Roentgen examination come from our inability to see, and to interpret correctly what we do see.

75. **Congenital Subluxation of the Hip Joint.**—Haglund shows by a number of roentgenograms that congenital subluxation of the hip joint is by no means such a well defined deformity as might be supposed from textbook descriptions. He insists that whenever anything is abnormal in the hip joint it should be given systematic reposition treatment in childhood. Otherwise the mildest form of congenital subluxation may develop into something serious and handicap the patient throughout life. He shows the numerous transi-

tional types between luxation and subluxation and between the latter and normal conditions.

76. **Thymus Not Responsible for Sudden Death.**—This is Hammar's conclusion from the research reported. It confirms in every respect his former statements on the subject. He published two years ago an account of the findings in the thymus in fourteen cases of sudden death from internal causes. The list included one adult; the others were children from 9 days to 6 years old. He has also a report in press on the thymus in twenty-five cases of exophthalmic goiter. The present article gives the microscopic findings and other minute data of the thymus from sixteen children from 3 weeks to 15 months old, his tables and other data filling forty pages. The findings are analyzed and compared with similar data from an equal number of apparently healthy children of about the same ages killed in accidents or dying from other external cause. The thymus in the cases of sudden death from internal causes differed in no respect from the thymus in the healthy children. Not even in the two cases of typical "thymus death" could anything be found to incriminate the thymus. It compared favorably in every respect with the thymus from the accident cases.

77. **Fat Embolism with Diabetic Lipemia.**—Hedren relates that at necropsy of sixty diabetics he found a slight degree of lipemia common, but in three it was very pronounced. Only one of these presented evidences of fat embolism. He reviews the literature on the subject and describes his case in detail. The cadavers with considerable lipemia were those of a boy of 16 and a woman of 24. The kidneys were much degenerated and the pancreas atrophied. It weighed only 29 gm. in the lad (normal 78 gm.), and 31 gm. in the woman (normal 88 gm.). The third case was that of a man of 25 who had had diabetes for two years. He died after a few hours of restlessness and other symptoms suggesting fat embolism in the lungs but there was no coma. Particles of fat were found in the lungs and also in other organs. The possibility of fat embolism with diabetic lipemia is now proved.

78. **Distomum Infection in Connection with Tumors.**—Henschen infected five dogs and three cats with *Opisthorchis felineus*—more generally known as *Distomum felineum*. His research was a continuation of Askanazy's work in this line and was done in his laboratory. Various changes were noted in the walls of the biliary passages and pancreatic duct but nothing to suggest a malignant tumor.

81. **Stenosis of the Trachea.**—Holmgren calls attention to a case in which he dilated the passage by means of a roll of iodoform gauze. The patient was a child who had had diphtheria three years before, and the larynx had become obstructed with a horizontal membrane just below the vocal cords. He had worn a tracheal cannula for some time. The membrane was excised through an incision from the tracheal fistula to the cricoid cartilage. Holmgren had intended dilating the stenosis by the Schmiegelow technic but found that the larynx had atrophied to such an extent that it was impossible to introduce a rubber tube. He had to content himself with introducing a roll of gauze, the silk threads holding it emerging through the tracheal cannula and through the mouth. The threads rendered it easy to replace the roll with a larger one at regular intervals. The roll was about 1.5 cm. long and was changed every two or three days at first and later once a week. The stenosis was thus gradually enlarged until finally a T tube could be introduced, the two arms fitting up and down in the trachea and larynx with the long end projecting through the tracheotomy opening. The larynx gradually recovered its tone and normal size and aspect. The vocal cords were stretched too far apart so he later excised some cicatricial tissue through a laryngofissure, impeding their action, and conditions are still approximately normal, over two years later.

91. **Toxic Action of Mercury in Certain Cases.**—Too large doses in too short a time were evidently responsible for the severe nephritis in three cases reported by Petren. The toxic nature of the kidney trouble was evidenced by the contrast between the normal output of urine and small amount of sediment and the from 4 to 13 per thousand albumin. In both cases the blood pressure was within normal range and the general health but slightly if at all impaired. The nephritis was finally thrown off after about a year. He compares with these cases the clinical symptoms and findings in a case of suicide with mercury. In another case a previously healthy man of 27 was given mercurial treatment once a week for five or six months for recent syphilis, with only two pauses for two weeks. Toward the last, large ulcerating syphilids developed on chest and arms, rebellious to further treatment, until a change was made to salvarsan and potassium iodid when they subsided in a few weeks. Petren further gives the details of three fatal cases of therapeutic mercurial poisoning. The form of mercury used was not known in one of the cases. The symptoms were mainly mercurial tremor, cachexia, mild nephritis and polyneuritis. Cachexia with stomatitis was responsible for the two other deaths. Petren cites further from Swedish literature three cases of fatal colitis following injections of "mercuriol." He expatiates further on the occasional difficulty in distinguishing between symptoms of the syphilis and those for which the mercury is responsible. He is convinced that the polyneuritis was the work of the mercury. The clinical history of six other cases is given in addition to illustrate the difficulties in estimating and treating syphilis causing symptoms on the part of the heart. When there are other signs of syphilis or a positive Wassermann in a patient with symptoms suggesting sclerosis of the coronaries or myocarditis, antisyphilitic treatment should certainly be given a trial.

## Ugeskrift for Læger, Copenhagen

*September 14, LXXVIII, No. 37, pp. 1571-1608*

101 *Ameba Dysentery and Liver Abscess in Denmark. (Et Tilfælde af Amøbe-Dysenteri.) L. Melchior.—p. 1571.

102 *Recurrence of Syphilis Two and Three Years After Abortive Treatment; Two Cases. (To Tilfælde af Recidiv af Syfilis 2¼ og 3 Aar efter Forsøg paa abortive Kur ved Indurationer med negativ Wassermann-Reaktion.) H. Boas.—p. 1579.

101. **Ameba Dysentery in Denmark.**—The necropsy in the case of subacute hemorrhagic enteritis reported revealed ameba dysentery and a solitary abscess in the liver. The necropsy records at Copenhagen for the last nine years list twenty-three cases of blood-borne liver abscess and eleven from gallstone or cancer trouble. The proportion was 1:245 necropsies, but there was a single abscess in only three of the cases, and in no instance was ameba dysentery responsible. Melchior gives illustrations of the microscopic findings in his case. The patient was a sailor just returned from South America, and he succumbed in three months after the first symptoms.

102. **Recurrence of Syphilis Two or Three Years After Thorough Abortive Treatment.**—Boas regards the two cases he reports as extremely instructive. The thorough course of one intramuscular and one intravenous injection of salvarsan (0.6 and 0.4 gm.) and fifty inunctions with mercury was commenced at the first sign of trouble—a hard ulcer in the genitals with swelling of glands in the groin on one side. The young men returned for inspection and the Wassermann test once a month during the first year thereafter and on alternate months during the following year. There were no symptoms of the syphilis after the first, and the Wassermann test was constantly negative throughout. After a period of two years and three months in one case and of three years in the second, one young man developed extensive ulcerating papules on the tonsils with syphilids on the trunk and genitals, and the other developed large ulcerating papules on the scalp with spirochetes in the secretion. At this recrudescence of the syphilis there was a faint Wassermann reaction in both.

Reinfection, after all, Boas remarks, is the only scientific proof that the syphilis has been cured, and reinfection in these two cases is out of the question, as he explains. It is discouraging to find that a period of latency lasting for three years after a thorough abortive course of treatment under apparently the most favorable conditions does not afford any certain guarantee that the disease has been cured. He might possibly have warded off the recrudescence if he had kept up intermittent mercurial treatment during the two years following the supposedly successful abortive treatment.